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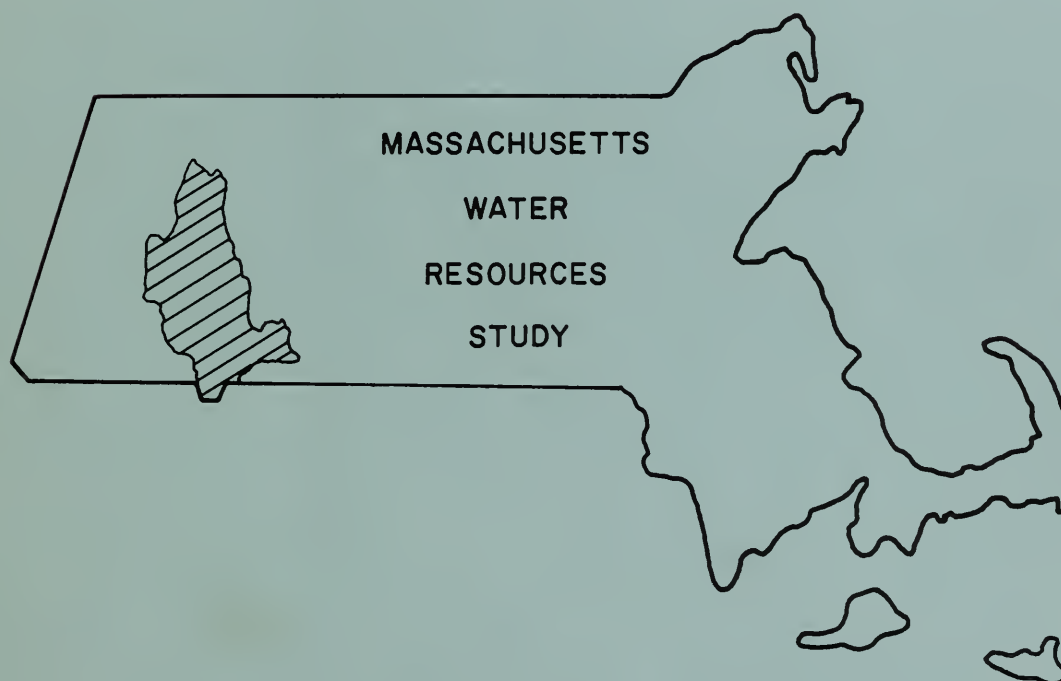
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UNITED STATES DEPARTMENT of AGRICULTURE

**INVENTORY**  
**of**  
**POTENTIAL and EXISTING**  
**UPSTREAM RESERVOIR SITES**  
**WESTFIELD STUDY AREA**



U.S. DEPARTMENT of AGRICULTURE  
Soil Conservation Service  
Economic Research Service  
Forest Service

In cooperation with the

**MASSACHUSETTS WATER RESOURCES COMMISSION**

DECEMBER 1975

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FOREWORD

The United States Department of Agriculture, in cooperation with the Massachusetts Water Resources Commission, is participating in the Massachusetts Water Resources Study of the water and related land resources of the Commonwealth. One phase of the study is the inventorying of potential and existing upstream reservoir sites.

The Commonwealth of Massachusetts, through the Water Resources Commission, provides guidance and significant financial contribution toward this phase of the Massachusetts Water Resources Study. The Massachusetts Water Resources Commission, to fulfill its responsibilities under Chapter 21, Sections 8 through 15 of the Massachusetts General Laws, requires technical and engineering data and information on potential upstream reservoir sites. The Department of Agriculture is participating in this study under the provisions of Section 6, of the Watershed Protection and Flood Prevention Act (Public Law-566, 83rd Congress, as amended) which authorizes the Secretary of Agriculture to cooperate with other federal, state and local agencies, in surveys and investigations of the watersheds of rivers and other waterways as a basis for the development of coordinated programs.

This report, prepared by the Soil Conservation Service and submitted by the USDA Field Advisory Committee to the Water Resources Commission, identifies and inventories potential and existing upstream reservoir sites within the Westfield Study Area.

The Massachusetts Water Resources Commission will use this report, together with other reports and studies prepared by the United States Department of Agriculture and others, in the preparation of a comprehensive plan for the Commonwealth's water and land resources.

The information and data contained herein will also assist local, state and federal agencies in their specific planning activities for the coordinated and orderly conservation, development, utilization and management of the water and land resources to meet the rapidly expanding needs.

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*Benjamin Isgur*  
Dr. Benjamin Isgur, State Cataloging Specialist,  
Soil Conservation Service and  
Chairman, Field Advisory Committee  
U. S. Department of Agriculture  
29 Cottage Street  
Amherst, Massachusetts 01002

*Bette Woody*  
Bette Woody, Commissioner  
Massachusetts Department of  
Environmental Management and  
Chairman, Massachusetts Water  
Resources Commission  
100 Cambridge Street  
Boston, Massachusetts 02202

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Soil Conservation Service personnel prepared this report. Ernest Richards was responsible for the development of the engineering phases of the report. Raymond Curran and Chester Konieczny collected and processed basic site data. Donald Mills reported on geological conditions. Patricia Cobb typed the final manuscript. James Wesoloski was responsible for editing and publication.

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INVENTORY OF  
POTENTIAL AND EXISTING UPSTREAM RESERVOIR SITES  
in the  
WESTFIELD STUDY AREA  
prepared by the  
UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
in cooperation with the  
MASSACHUSETTS WATER RESOURCES COMMISSION

INTRODUCTION

This report presents data on 96 potential and 41 existing reservoirs in the Westfield Study Area in Berkshire, Franklin, Hampden, and Hampshire Counties, Massachusetts.

Potential reservoir sites were identified and basic data collected. Preliminary engineering designs and cost estimates were prepared for several potential levels of development at each reservoir. This information, along with a short description of the site and a map showing site locations, is presented in the report. Information concerning the physical dimensions, apparent condition of the dam, and potential for expansion of existing reservoirs is also included in the report.

Many of the reservoir sites in this inventory have potential for development as municipal water supplies, fish and wildlife pools, recreation pools, or floodwater retarding dams.

This inventory can be used by the state, municipalities, planning boards and commissions, conservation commissions, as well as private individuals in planning the best use of the limited number of potential reservoir sites in the Commonwealth.

DESCRIPTION OF STUDY AREA

The Westfield Study Area is located in the four western counties in Massachusetts. The main streams in the study area include the Westfield River, the Middle Branch of the Westfield River, and the West Branch of the Westfield River. The study area, which covers about 335,000 acres or 523 square miles, is divided into eleven subwatersheds. All or portions of 28 cities or towns are located within the subwatersheds.

CRITERIA

Potential Reservoir Sites

The primary considerations used to identify potential reservoir sites were: suitable topography for a dam and reservoir, sufficient drainage area to maintain the proposed reservoir, and a relatively undeveloped pool area.

The following criteria were used as a guide in site selection:

1. Drainage area -- larger than one-half square mile, but not greater than 50 square miles.
2. Ratio of drainage area to beneficial pool area -- not less than 10 to 1.
3. Minimum beneficial pool depth -- 7 feet at the dam.
4. Minimum beneficial pool area -- 10 acres.
5. Minimum beneficial pool capacity -- 100 acre-feet.
6. Maximum beneficial pool capacity -- storage volume equal to 25 inches of runoff from the drainage area.
7. Maximum height of dam -- 100 feet.
8. Pool area relatively undeveloped -- no housing developments, industrial areas, or major highways inundated.

#### Existing Reservoirs

Existing reservoirs were located using the U. S. Geological Survey (USGS) quadrangle sheets. Two criteria were used to determine sites to be included in this report:

1. Surface area -- at least 10 surface acres or a pond identified by name on the USGS topographic map.
2. Man-made dam -- The pool must be the result of dam construction. Natural ponds and beaver dams are excluded.

#### INVESTIGATIONS AND ANALYSES

##### Potential Reservoir Sites

Sites were located using the latest available USGS 7½ minute quadrangle sheets. Natural basins, or topography favorable for storage of water, and an undeveloped pool area were the primary considerations in the initial site selection. Watershed boundaries were delineated on the quadrangle sheets and the drainage area was determined for each site. Water storage areas and volumes available upstream of the site centerline were calculated. Data were also obtained to calculate the volume of earthfill required for the dam and any supplementary dikes that might be needed to maintain a reservoir.

At each site a field reconnaissance was made that included an inventory of land and facilities (man-made structures) that would be affected if a dam and reservoir were developed at the site. If it was determined that the reservoir would flood extensive man-made facilities, or a study of the elevation-area storage data showed that the site did not meet criteria for the study, the site was dropped from further consideration.

A surficial geologic investigation was made of each potential site to determine any obvious geologic conditions that might affect the waterholding capability or require extensive foundation preparation. A preliminary geological report was prepared which outlined the types of materials that might be expected at the site and their effect on construction costs and waterholding capabilities for the site. The report of geologic conditions was based on the geologist's interpretation following the surficial investigation of the site and surrounding area. No borings were made and subsurface conditions may vary from those indicated in this report.

Hydrologic and hydraulic data were calculated using methods developed by the Soil Conservation Service. Rainfall data were obtained from Technical Papers 40 and 49, U. S. Department of Commerce, Weather Bureau. Preliminary structure site analyses for several levels of development for each site were processed by computer, using a program which determines the most economical type of principal spillway; determines the runoff and peak flow for the 100-year frequency, 10-day duration, principal spillway design storm; routes the design storm to set the emergency spillway crest; performs other routings to determine the design high water and top of dam elevations; calculates embankment yardage and other construction quantities; determines the total estimated cost of the reservoir; and calculates "safe yield" for water supply purposes.

### Existing Reservoirs

An inventory was made of 41 existing reservoirs that cover at least ten acres or are identified by name on the USGS quadrangle sheet, and are formed by a man-made dam. The reservoirs were located using the USGS quadrangle sheets. An engineer made a field reconnaissance to determine the physical condition of each structure and to assess the potential for expansion of the reservoir. While at the site, photographs were taken. Selected photographs are included in this report. Ownership and use information for the reservoirs was obtained from records of the Massachusetts Department of Public Works, the Massachusetts Water Resources Commission and from local interviews.

### COSTS

Preliminary cost estimates for potential reservoir sites were based on construction costs and land values as of 1974. The cost estimates include:



(1) construction costs; (2) contingencies; (3) engineering and administrative services necessary for surveys, geology, final design, and construction inspection; (4) cost for land required for the reservoir and construction of the dam and spillway; and (5) costs associated with purchase or relocation of man-made facilities affected by the constructed reservoir.

Construction costs were based on recent dam construction contract costs in Massachusetts. A factor for contingencies, equal to 15% to 35% of the construction cost, was included to account for items that were not considered at this intensity of study. Engineering and administrative services ranged from 20% to 40% of the construction cost.

Costs for land acquisition were based on an evaluation of current real estate transactions and market conditions. Land with potential for development was valued at from \$1,000 to \$10,000 per acre; land with little development potential was valued at from \$200 to \$500 per acre. Land values also varied from site to site based on the proximity to developed areas and highways, development taking place in the area, and suitability for development. Land needed for the dam, spillway and design high water pool was included in the land acquisition cost.

Cost estimates are presented on the basis of a cost per acre-foot of storage and cost per surface-acre to provide a comparison between different sites and different levels of development at the same site. Costs are based on preliminary estimates; firm cost estimates for any site can be determined only after completion of detailed geologic and engineering investigations, final structural designs, and land appraisals.

No cost estimates are included for existing reservoirs.

### REPORT FORMAT

The report is divided into sections based on the eleven subwatersheds in the Westfield Study Area. The location map, placed after the Table of Contents, outlines the area covered by each subwatershed. To aid local residents in determining which sites are located in their city or town, the Municipal Index of Sites lists the site identification numbers for potential and existing reservoir sites within each municipality and the page number of this report on which data are recorded.

Each subwatershed section provides Site Data for the potential and existing reservoir sites, located within the subwatershed, which are included in this report.

#### Potential Reservoir Sites

Data for potential reservoirs are presented in the following format:

Location: includes a narrative description of the location of the site by reference to nearby roads, railroads, or other physical landmarks. In addition, the latitude, longitude,



and USGS quadrangle sheet name are provided for more accurate location.

#### Facilities

**Affected:** describes any man-made facilities that would be flooded by a reservoir at the potential site. The elevation of existing facilities was estimated during the engineer's field reconnaissance with the aid of the USGS quadrangle sheets.

#### Geologic

**Conditions:** provides a summary of the preliminary geologic report. The material in the abutments (the valley sides) and the foundation ( the valley floor) is described. An estimate is made of the depth to bedrock and the probable type of rock. The availability of fill material which could be used in the dam construction is noted. Possible leakage problems are indicated and the water-holding capability of the site is subjectively described as "good," "fair," or "poor." The waterholding capability statement is based on the geologist's interpretation of the surficial conditions observed during the field reconnaissance.

#### Engineering

**Notes:** provides information which should be helpful in preliminary design of a dam. One of the abutments is recommended as the location for an excavated emergency spillway. If an excavated emergency spillway is unable to carry the required flows at safe velocity, the need for a concrete emergency spillway is noted.

#### Public

**Ownership:** indicates that some portion of a reservoir site is located on land owned by a governmental or quasi-public unit.

Sites which meet study criteria have been analyzed using a computer program which develops preliminary structure site analyses for several levels of beneficial pool. Results of the computer program are presented in the tables entitled, "Summary Data for Potential Upstream Reservoir Sites" at the end of each subwatershed section. Two information lines contain data on site drainage area, USGS quadrangle name on which the site is located, latitude and longitude of the site, site rating, stream water quality, and principal spillway design storm runoff and peak flow. The site rating is based on geologic conditions and the expected waterholding capability. Sites are given one of the following ratings:

1. Suited for deep permanent storage (over 10 feet in depth).
2. Best suited for shallow water storage (3 to 5 feet maximum depth).
3. Best suited for temporary storage (e.g., floodwater and sediment storage).

In order to furnish the most data for potential reservoir sites, each site was considered to be suitable for deep permanent storage (rating "1") for purposes of design and analyses. The rating for any site could change based on detailed geologic investigations.

Stream water quality ratings are based on classifications assigned by the Division of Water Pollution Control, Massachusetts Water Resources Commission, and published in "Water Quality Standard," June 1967, and are as follows:

- "Class A -- Waters designated for use as public water supply in accordance with Chapter lll of the General Laws. Character uniformly excellent.
- "Class B -- Suitable for bathing and recreational purpose including water contact sports. Acceptable for public water supply with appropriate treatment.  
Suitable for agricultural, and certain industrial cooling and process uses; excellent fish and wildlife habitat; excellent aesthetic value.
- "Class C -- Suitable for recreational boating; habitat for wildlife and common food and game fishes indigenous to the region; certain industrial cooling and process uses; under some conditions acceptable for public water supply with appropriate treatment. Suitable for irrigation of crops used for consumption after cooking. Good aesthetic value.
- "Class D -- Suitable for aesthetic enjoyment, power, navigation, and certain industrial cooling and process uses. Class "D" waters will be assigned only where a higher water use class cannot be attained after all appropriate waste treatment methods are utilized."

The Summary Data for Potential Upstream Reservoir Sites tables also contain data for as many as six possible levels of development at each site. Elevations of the beneficial pool, emergency spillway crest, design high water, and top of dam are shown along with pertinent storage volumes, surface areas and depths. Total cost expressed in dollars per acre-foot of storage and dollars per surface-acre are provided to aid in comparison of levels of development. The emergency spillway type which was used in the preliminary design is indicated by an emergency spillway type code explained in the table notes.

These tables are photo-reductions of the computer output sheets. Elevations are shown to the tenth of a foot and costs to the nearest \$10, but are not to be considered that accurate because of the limited investigations made with preliminary data. All the Summary Data Tables are based on preliminary reconnaissance-type investigations and computer-produced structure designs. Additional detailed engineering, geologic and design investigations must be made before final site selection, land acquisition and final design would be practical.

Estimated safe yields for each potential reservoir are also shown on the tables and were based on information extrapolated from data developed by Professor G. R. Higgins, Civil Engineering Department, University of Massachusetts. These estimated safe yields are based on a 95% chance, or the minimum yield that could be expected 19 years out of 20 -- taking into consideration reservoir storage-volume and expected runoff. These data do not consider evaporation, seepage, or prior upstream usage losses.

The Committee on Rainfall and Yield of Drainage Areas of the New England Water Works Association has recommended a figure of 600,000 gallons per day per square mile as a maximum economically feasible safe yield. Data for some of the potential sites in this report show a safe yield above 600,000 gallons per square mile per day. These higher values are useful to define the upper portion of a discharge-storage curve for preliminary analysis. For detailed evaluation of a potential site or water supply purposes, the recommendation of the New England Water Works Association should be considered.

#### Existing Reservoirs

Data for existing reservoirs are presented in the following format:

Location: of the dam is indicated by reference to nearby roads, railroads, or other physical landmarks. The appropriate USGS quadrangle sheet, latitude, and longitude are provided for more accurate location.

Physical data (surface area, height of dam, and drainage area) were estimated from the quadrangle sheet and by field reconnaissance.

Potential  
for

Expansion: potential is estimated and any major man-made facilities which would be affected by an enlarged reservoir are noted. Some of the site narratives contain the phrase, "Significant expansion does not appear practical." The phrase is used to indicate that although the pool level might be raised by a few feet or the pool area increased by a few acres, any greater expansion does not appear feasible due to topography or facilities which would be flooded.

In some instances, the drainage area of the reservoir does not meet the criteria requiring a 10 to 1 drainage area to pool area ratio, below which there may be relatively high evaporation losses. An increase in reservoir surface area might increase evaporation losses to a point where the reservoir could not be maintained during the summer months. These situations are indicated by the statement, "The small drainage area limits expansion potential."



Remarks: includes a description of the dam and spillway system. Construction materials, spillway type and size, and condition of the structure are noted.

Ownership  
and

Use: is indicated, if available. In some cases, the pool is not maintained for a specific purpose, but may have incidental use for recreation. This is probably the situation for existing reservoirs which are indicated in the Massachusetts Department of Public Works records as being used to "store water." Typical of these sites are old mill dams which are no longer utilized for mill power.

Selected photographs of existing dams, spillways, and reservoirs are included in the report.

### MAPS

Individual subwatershed maps appearing at the end of each section indicate the location of the potential and existing reservoir sites in that subwatershed. The maps are reductions of mosaics prepared from 7½ minute USGS quadrangle sheets (1" = 2000' scale). The quadrangle sheets used and publication dates are listed on the maps. Potential sites are indicated with a red rectangle surrounding the site number. Existing reservoirs are identified by a red circle surrounding the site number.





WESTFIELD STUDY AREA  
SITE DATA FOR

Subwatershed WE-36, Westfield River

The Westfield River subwatershed covers about 108,600 acres in Savoy, Peru, and Windsor in Berkshire County; Ashfield and Hawley in Franklin County; Chester in Hampden County; and Chesterfield, Cummington, Goshen, Huntington, Plainfield, Westhampton, and Worthington in Hampshire County.

The major stream in the subwatershed is the Westfield River which originates in Savoy and flows southeasterly through Windsor, Cummington, Chesterfield, and Huntington. A large Corps of Engineers flood control project, Knightville Reservoir, is located in Huntington.

Elevations in the subwatershed range from a high of about 2,300 feet in Savoy to a low of 400 feet in Huntington.

Thirty-four potential reservoir sites and nine existing reservoirs were studied.

POTENTIAL SITE WE-3601

Location: On Center Brook about 4,400 feet downstream from Center Road in Savoy, Mass.

Windsor, Mass. USGS quadrangle

Latitude: 42°35'16" Longitude: 73°02'20"

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	Center Road and utilities	1925
	Cottage	1982
	Cottage	1990

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till) above elevation 1950. Below elevation 1950, the abutments are outwash sand and gravel. Depth to bedrock in the foundation is estimated to be from 5 to 10 feet. Bedrock outcrops in the brook upstream from the site. Waterholding capabilities appear to be fair to poor. Seepage is expected through both abutments. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

Public Ownership: The dam site and all the reservoir to the east of Center Road would be in the Savoy Mountain State Forest.

\*\*\*\*\*



POTENTIAL SITE WE-3602

Location: On Center Brook about 750 feet upstream from Center Road in Savoy, Mass.

Windsor, Mass. USGS quadrangle

Latitude: 42°34'18" Longitude: 73°02'05"

Facilities	Facility	Elevation
Affected:	Center Road and utilities	1740
	Garage	1775
	2 houses	1790

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till) above elevation 1780 and outwash sand and gravel below elevation 1780. Depth to bedrock in the foundation is estimated to be from 20 to 30 feet. Waterholding capabilities appear to be fair to poor. Seepage is expected through both abutments and the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

Public Ownership: A portion of the reservoir above elevation 1890 feet would be in the Savoy Mountain State Forest.

\*\*\*\*\*

POTENTIAL SITE WE-3603

Location: On Drowned Land Brook about 300 feet upstream from Jackson Road in Savoy, Mass.

Windsor, Mass. USGS quadrangle

Latitude: 42°33'41" Longitude: 73°02'54"

Facilities	Facility	Elevation
Affected:	Jackson Road and utilities	1925
	Windsor Road and utilities	1945

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). Depth to bedrock in the foundation is estimated to be from 10 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

This is substantially the same site as site M14A-1 that was included in the Comprehensive Study of the Connecticut River Basin, U. S. Department of Agriculture, June 1970.

\*\*\*\*\*



POTENTIAL SITE WE-3604

Location: On Phelps Brook about 800 feet downstream from the Savoy-Windsor town line in Windsor, Mass.

Plainfield, Mass. USGS quadrangle

Latitude:  $42^{\circ}32'30''$  Longitude:  $72^{\circ}59'30''$

Facilities Affected: None below elevation 1675.

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). Depth to bedrock in the foundation is estimated to be from 10 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE WE-3605

Location: On an unnamed tributary to Windsor Pond about 750 feet upstream from Windsor Pond Road in Windsor, Mass.

Plainfield, Mass. USGS quadrangle

Latitude:  $42^{\circ}32'17''$  Longitude:  $72^{\circ}58'25''$

Facilities Affected:	<u>Facility</u> Cottage	<u>Elevation</u> 1642
----------------------	----------------------------	--------------------------

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). Depth to bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE WE-3606

Location: On the Swift River about 3,000 feet  
upstream from Watson Road in Ashfield, Mass.

Ashfield, Mass. USGS quadrangle

Latitude:  $42^{\circ}32'41''$  Longitude:  $72^{\circ}52'07''$

Facilities None below elevation 1597.  
Affected:

Geologic Both abutments are silty sand with gravel, cobbles, and  
Conditions: boulders (glacial till). Depth to bedrock in the foundation  
is estimated to be from 15 to 20 feet. Waterholding capa-  
bilities appear to be good. Borrow material for dam con-  
struction was located near the site.

Engineering The left abutment is recommended as the excavated emergency  
Notes: spillway location.

\*\*\*\*\*

POTENTIAL SITE WE-3607

Location: On an unnamed tributary of the Swift River about 3,300 feet  
downstream from Hawley Road in Ashfield, Mass.

Ashfield, Mass. USGS quadrangle

Latitude:  $42^{\circ}32'51''$  Longitude:  $72^{\circ}51'04''$

Facilities None below elevation 1627.  
Affected:

Geologic Both abutments are thin silty sand with outcrops of schist  
Conditions: bedrock. Depth to bedrock in the foundation is estimated  
to be less than 5 feet. Waterholding capabilities appear  
to be good. Borrow material for dam construction was lo-  
cated near the site.

Engineering The right abutment is recommended as the excavated emergency  
Notes: spillway location.

\*\*\*\*\*

POTENTIAL SITE WE-3608

Location: On Mill Brook about 200 feet upstream from High Street in Plainfield, Mass.

Plainfield, Mass. USGS quadrangle

Latitude: 42°30'58" Longitude: 72°55'32"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	West Hill Road	1378
	High Tension Lines	1378
	Prospect Road	1415
	Route 116 and utilities	1418
	2 cottages	1422
	House	1438
	House	1440
	Barn	1445
	Unnamed Road(dead end)	1460
	Neighborhood Utilities	1460

Geologic Conditions: Both abutments are schist bedrock with some thin deposits of englacial drift. Depth to bedrock in the foundation is estimated to be less than 5 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE WE-3609

Location: On Swift River about 3,400 feet downstream from a high tension power line that is south of Watson Road in Ashfield, Mass.

Ashfield, Mass. USGS quadrangle

Latitude: 42°31'13" Longitude: 72°51'56"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	High tension line	1408
	North Road and telephone line	1440

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (englacial drift). Bedrock outcrops on a hill on the left abutment. Depth to bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

Developing the site above elevation 1435 may require a dike to the south of the reservoir and to the north of the dam.



POTENTIAL SITE WE-3609 (cont'd.)

This is substantially the same site as site M14A-5 that was included in the Comprehensive Study of the Connecticut River Basin, U. S. Department of Agriculture, June, 1970.

\*\*\*\*\*

POTENTIAL SITE WE-3610

Location: On the Swift River about 2,800 feet upstream from Spruce Corner in Ashfield, Mass.

Ashfield, Mass. USGS

Latitude: 42°30'33" Longitude: 72°51'02"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Spruce Corner Road and utilities	1350

Geologic Conditions: The right abutment is outwash sand and gravel below elevation 1350, with englacial drift above. The left abutment is outwash sand and gravel below elevation 1320, with englacial drift above. Both abutments are shallow to englacial drift or bedrock. Depth to bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be good if measures are taken to reduce seepage through gravel deposits. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE WE-3611

Location: On an unnamed tributary to the Swift River about 4,500 feet northeast of Spruce Corner in Ashfield, Mass.

Ashfield, Mass. USGS quadrangle

Latitude: 42°30'38" Longitude: 72°50'16"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	House and garage	1455
	Spruce Corner Road and utilities	1455

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (englacial drift). Bedrock outcrops in the brook. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location. There is an old breached rock and earthfill dam at the site. The breach has been dammed by beavers.

POTENTIAL SITE WE-3612

Location: On Westfield Brook about 1,750 feet downstream from Peru Road in Windsor.

Peru, Mass. USGS quadrangle

Latitude: 42°29'13" Longitude: 73°02'32"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Bowman Road and utilities	1922
	Peru Road	1925
	Nobody's Road	1932

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). Both abutments are shallow to bedrock. Depth to bedrock in the foundation is estimated to be from 10 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

This is substantially the same site as site M14A-2 that was included in the Comprehensive Study of the Connecticut River Basin, U. S. Department of Agriculture, June 1970.

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POTENTIAL SITE WE-3613

Location: On Alder Meadow Brook about 1,550 feet upstream from Worthington Road in Windsor, Mass.

Worthington, Mass. USGS quadrangle

Latitude: 42°28'09" Longitude: 72°59'26"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Pierce Road	1585
	Neighborhood Road	1585

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till) with outwash sand and gravel at the bottom of both slopes. Depth to bedrock in the foundation is estimated to be from 20 to 30 feet. Waterholding capabilities appear to be fair if measures are taken to reduce seepage through the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

This is substantially the same site as site M14A-3 that was included in the Comprehensive Study of the Connecticut River Basin, U. S. Department of Agriculture, June 1970.

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POTENTIAL SITE WE-3614

Location: On the North Branch of the Swift River at the outlet of Crocket Meadow Swamp in Ashfield, Mass.

Goshen, Mass. USGS quadrangle

Latitude: 42°29'08" Longitude: 72°52'17"

Facilities Affected:	Facility	Elevation
	House	1245
	Cummington Road and utilities	1267
	Ranney Corner Road and utilities	1269
	Shed	1272
	House and shed	1280
	Pleasant Street	1285
	House, barn, garage and shed	1295

Geologic Conditions: The left abutment is silty sand with gravel, cobbles, and boulders (glacial till). The right abutment is schist bedrock with thin discontinuous deposits of englacial drift. Depth to bedrock in the foundation is estimated to be from 5 to 10 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

This is substantially the same site as site M14A-6 that was included in the Comprehensive Study of the Connecticut River Basin, U. S. Department of Agriculture, June 1970.

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POTENTIAL SITE WE-3615

Location: On an unnamed tributary to East Brook about 1200 feet upstream from East Brook in Ashfield, Mass.

Goshen, Mass. USGS quadrangle

Latitude: 42°29'05" Longitude: 72°49'24"

Facilities Affected: None below elevation 1377

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till) with schist bedrock at the bottom of both slopes. Bedrock outcrops in the brook. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.



POTENTIAL SITE WE-3616

Location: On Meadow Brook about 100 feet upstream from Stage Road in Cummington, Mass.

Worthington, Mass. USGS quadrangle

Latitude: 42°28'35" Longitude: 72°53'28"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Nash Road and utilities	1175

Geologic Conditions Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). Bedrock outcrops high on the right abutment. Depth to bedrock in the foundation is estimated to be from 20 to 25 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

This is substantially the same site as site M14A-4 that was included in the Comprehensive Study of the Connecticut River Basin, U. S. Department of Agriculture, June 1970.

\*\*\*\*\*

POTENTIAL SITE WE-3617

Location: On an unnamed tributary to the Swift River about 2,100 feet upstream from Spruce Corner Road in Ashfield, Mass.

Goshen, Mass. USGS quadrangle

Latitude: 42°28'43" Longitude: 72°50'20"

Facilities	None below elevation 1357
Affected:	

Geologic Conditions: The left abutment is silty sand with gravel, cobbles, and boulders (glacial till). The right abutment is schist bedrock. Bedrock outcrops in the brook at the centerline of the dam. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location. There is an old breached rock and earthfill dam at the site. The breach has been dammed by beavers.

\*\*\*\*\*

POTENTIAL SITE WE-3618

Location: On the North Branch of the Swift River about 100 feet upstream from Stage Road in Cummington, Mass.

Goshen, Mass. USGS quadrangle

Latitude:  $42^{\circ}28'06''$  Longitude:  $72^{\circ}52'17''$

Facilities Affected:	Facility	Elevation
	Stage Road and utilities	1170
	House trailer	1200

Geologic Conditions: The left abutment is silty sand with gravel, cobbles, and boulders with bedrock outcrops below elevation 1160. The right abutment is schist bedrock. Schist bedrock outcrops at the site. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE WE-3619

Location: On East Brook about 2,400 feet upstream from State Route 9 in Goshen, Mass.

Goshen, Mass. USGS quadrangle

Latitude:  $42^{\circ}27'43''$  Longitude:  $72^{\circ}50'08''$

Facilities Affected: None below elevation 1276

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). Depth to bedrock in the foundation is estimated to be from 10 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

This is substantially the same site as site M14A-7 that was included in the Comprehensive Study of the Connecticut River Basin, U. S. Department of Agriculture, June 1970.

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POTENTIAL SITE WE-3620

Location: On an unnamed tributary to East Brook about 900 feet upstream from the confluence with East Brook in the Lithia section of Goshen, Mass.

Goshen, Mass. USGS quadrangle

Latitude:  $42^{\circ}27'14''$  Longitude:  $72^{\circ}49'54''$

Facilities	Facility	Elevation
Affected:	Barn and shed	1210
	2 Barns and 2 sheds	1212
	Route 9 and utilities	1215
	Sears Road and utilities	1217
	House	1220

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). Schist bedrock outcrops high on the left abutment. Depth to bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be fair. Seepage is expected through the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: From a topographic standpoint, the right abutment is recommended for the excavated emergency spillway location, however, the underlying strata will probably dictate the location of the emergency spillway.

\*\*\*\*\*

POTENTIAL SITE WE-3621

Location: On Watts Stream about 3,350 feet downstream from Hinsdale Road in Worthington, Mass.

Worthington, Mass. USGS quadrangle

Latitude:  $42^{\circ}24'39''$  Longitude:  $72^{\circ}57'16''$

Facilities Affected: None below elevation 1657

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). Depth to bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location. There is an old beaver dam and pond at the site.

\*\*\*\*\*

POTENTIAL SITE WE-3622

Location: On the major tributary to Hammond Pond about 1,250 feet upstream from Pond Hill Road in Goshen, Mass.

Goshen, Mass. USGS quadrangle

Latitude: 42°25'05" Longitude: 72°48'02"

Facilities	Facility	Elevation
Affected:	Hathaway Road	1265
	Chesterfield Road and utilities	1270

Geologic Conditions: Both abutments are silty sand and gravel with cobbles, and boulders (glacial till). Depth to bedrock in the foundation is estimated to be from 5 to 10 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE WE-3623

Location: On an unnamed tributary to Wards Stream about 700 feet upstream from Chesterfield Road in Worthington, Mass.

Worthington, Mass. USGS quadrangle

Latitude: 42°23'28" Longitude: 72°54'51"

Facilities	Facility	Elevation
Affected:	Telephone cable	1195

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). Depth to bedrock in the foundation is estimated to be from 30 to 40 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location. Developing the site above elevation 1205 will require a dike to the southeast and adjacent to Chesterfield Road.

\*\*\*\*\*

POTENTIAL SITE WE-3624

Location: On the main tributary to Scout Pond about 1,400 feet upstream from Old Chesterfield Road in Chesterfield, Mass.

Goshen, Mass. USGS quadrangle

Latitude:  $42^{\circ}23'49''$  Longitude:  $72^{\circ}48'22''$

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Bathouse	1215

Geologic Conditions: Both abutments are silty gravel with sand, cobbles, and boulders (glacial till or englacial drift). Depth to bedrock in the foundation is estimated to be from 20 to 25 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

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POTENTIAL SITE WE-3625

Location: On Dead Branch Brook about 100 feet upstream from Old Chesterfield Road in Chesterfield, Mass.

Goshen, Mass. USGS quadrangle

Latitude:  $42^{\circ}23'26''$  Longitude:  $72^{\circ}49'23''$

Facilities	None below elevation 1168
Affected:	

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). Depth to bedrock in the foundation is estimated to be from 25 to 30 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

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POTENTIAL SITE WE-3626

Location: On Page Brook at the outlet of Dead Swamp about 2,800 feet upstream from Curtis Road in Chesterfield, Mass.

Goshen, Mass. USGS quadrangle

Latitude:  $42^{\circ}22'48''$  Longitude:  $72^{\circ}48'05''$

Facilities	Facility	Elevation
Affected:	Route 143	1242
	Telephone cable	1242

Geologic Conditions: Both abutments are bedrock at the toe of the slopes and en-glacial drift at higher elevations. Bedrock outcrops at the centerline of the dam. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE WE-3627

Location: On Wards Stream about 75 feet upstream from Guard Road in Worthington, Mass.

Worthington, Mass. USGS quadrangle

Latitude:  $42^{\circ}22'46''$  Longitude:  $72^{\circ}54'43''$

Facilities	Facility	Elevation
Affected:	Camp	1170
	Chesterfield Road and utilities	1185
	Radicut Road and utilities	1188
	Telephone cable	1195
	Harvey Road and utilities	1208
	Farm buildings	1210

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till) with schist bedrock high on the right abutment. Depth to bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

This is substantially the same site as site M14A-9 that was included in the Comprehensive Study of the Connecticut River Basin, U. S. Department of Agriculture, June 1970.

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POTENTIAL SITE WE-3628

Location: On Watts Stream about 650 feet upstream from Prentess Road in Worthington, Mass.

Chester, Mass. USGS quadrangle

Latitude: 42°22'08" Longitude: 72°54'43"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Guard Road	1198
	Building	1200
	2 houses	1200
	Ringville Road and utilities	1210

Geologic Conditions: Both abutments are schist bedrock at the toe of the slopes with silty sand (englacial drift) above elevation 1190. Schist bedrock outcrops in the brook. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

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POTENTIAL SITE WE-3629

Location: On Jackson Brook about 2,550 feet downstream from Will Smith Road in Worthington, Mass.

Chester, Mass. USGS quadrangle

Latitude: 42°22'08" Longitude: 72°53'41"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Will Smith Road	1100

Geologic Conditions: The left abutment is thin, silty sand with gravel, cobbles, and boulders (glacial till). The right abutment is schist bedrock broken into large rocks up to 30 feet in diameter. Bedrock outcrops in the brook at the site. Waterholding capabilities appear to be good. Borrow material for dam construction is located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

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POTENTIAL SITE WE-3630

Location: On Jackson Brook about 3,150 feet upstream from Little Galilee Pond Dam in Worthington, Mass.

Chester, Mass. USGS quadrangle

Latitude:  $42^{\circ}21'18''$  Longitude:  $72^{\circ}53'28''$

## Facilities

Affected: None below elevation 1045.

## Geologic

Conditions: The right abutment is blocky schist bedrock. The left abutment is silty sand with gravel, cobbles, and boulders (glacial till). Depth to bedrock in the foundation is estimated to be less than five feet. There are rock outcrops in the brook. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

## Engineering

Notes: The left abutment is recommended as the excavated emergency spillway location. This is substantially the same site as Site M14A-10 that was included in the Comprehensive Study of the Connecticut River Basin, U.S. Department of Agriculture, June, 1970.

POTENTIAL SITE WE-3631

Location: On Dead Branch Brook about 670 feet upstream from Northwest Road in Chesterfield, Mass.

Westhampton, Mass. USGS quadrangle

Latitude:  $42^{\circ}21'27''$  Longitude:  $72^{\circ}49'20''$

## Facilities

Affected:	Facility	Elevation
	Roberts Meadow Road and utilities	1095
	3 buildings (lumber mill)	1100
	Mill shop	1100
	House	1105
	House and barn	1110
	House	1112
	Main Road and utilities	1115
	Stage Road and utilities	1115
	Bisbee Road and utilities	1115
	House	1120
	2 houses	1130

## Geologic

Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till) shallow to schist bedrock. There are many rock outcrops on both abutments. Bedrock outcrops in the brook and at the toe of both abutments. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.



POTENTIAL SITE WE-3631 (cont'd)

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

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POTENTIAL SITE WE-3632

Location: On Dead Branch Brook about 1,700 feet downstream from the Chesterfield-Westhampton town line in Westhampton, Mass.

Westhampton, Mass. USGS quadrangle

Latitude: 42°20'46" Longitude: 72°49'08"

Facilities Affected	Facility	Elevation
	House, barn and shed	1020
	Telephone cable	1020
	Cemetery	1040
	3 houses and garage	1045
	Northwest Road and utilities	1050
	House and barn	1065

Geologic Conditions: Both abutments are poorly graded sand and gravel (ice contact deposits); probably shallow to bedrock. Depth to bedrock in the foundation is estimated to be from 30 to 40 feet. Waterholding capabilities appear to be fair to poor. Seepage is expected through the sand and gravel deposits on both abutments. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

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POTENTIAL SITE WE-3634

Location: On an unnamed tributary to Dead Branch Brook about 2,900 feet upstream from the confluence with Dead Branch Brook in Huntington, Mass.

Westhampton, Mass. USGS quadrangle

Latitude: 42°19'53" Longitude: 72°49'32"

Facilities Affected: None below elevation 1185

Geologic Conditions: The left abutment is schist bedrock. The right abutment is outwash sand and gravel with englacial drift and boulders high on the abutment. Depth to bedrock in the foundation is estimated to be from 5 to 10 feet. Waterholding capabilities appear to be fair. Previous borrow material for dam construction was located near the site impervious material was not located.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

POTENTIAL SITE WE-3635

Location: On Sykes Brook about 650 feet upstream from Goss Hill Road in  
Huntington, Mass.

Chester, Mass. USGS quadrangle

Latitude: 42°18'11" Longitude: 72°52'52"

Facilities Affected: None below elevation 1030

Geologic Conditions: The left abutment is thin deposits of silty sand with gravel,  
cobbles, and boulders (englacial drift). The right abutment  
is schist bedrock. Depth to bedrock in the foundation is es-  
timated to be 5 feet. Waterholding capabilities appear to be  
good. Borrow material for dam construction was located near  
the site.

Engineering Notes: The left abutment is recommended as the excavated emergency  
spillway location. There is an old beaver dam at the site.

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## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-WESTFIELD														
BENEFICIAL POOL														
SUBWATERSHED WESTFIELD RIVER														
ELEV	STORAGE	COST PER AC FT	AREA (AC)	COST/ SURF AC (\$)	DEPTH AT DAM (FT)	CREST ELEV + TYPE (MSL)	STORAGE AT CREST AC FT	DESIGN HIGH WATER ELEV (MSL)	AREA (AC)	TOP ELEV (MSL)	HGT FT	FILL VOL (1000 CY)	PERCENT CHANCE	SAFE YIELD AT 95
(MSL)	AC FT	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN
DA= 1.71 SQ MI = 1094 AC														
USGS QUAD-WINDSOR														
LATITUDE 42-35-16 LONGITUDE 73-02-20														
RUNOFF = 8.30 IN, PEAK FLOW = 529 CFS														
SITE WE-3601														
SITE RATING	(2)													
1913.8	0	0.0			13.8	* 1957.3 E	624 6.8	1290 *	1959.6	39 *	1965.0	65	245 *	*****
1933.1	100	1.1			33.2	* 1933.1 T	114 1.2	8400 *	1947.8	24 *	1956.1	56	162 *	0.27
1952.8	463	5.1			52.8	* 1952.8 T	477 5.1	2920 *	1963.3	46 *	1969.1	69	290 *	0.72
1969.8	1190	13.0			69.8	* 1978.3 E	1758 19.2	920 *	1980.6	78 *	1985.6	86	529 *	1.22
1984.8	2280	25.0			84.9	* 1989.3 E	2704 29.7	760 *	1991.6	103 *	1995.0	95	705 *	1.56
SITE WE-3602														
SITE RATING	(2)													
1751.8	0	0.0			11.8	* 1792.8 T	648 4.1	3100 *	1803.3	41 *	1810.8	71	470 *	*****
1766.8	100	0.6			26.7	* 1766.8 T	123 0.8	9310 *	1779.5	19 *	1785.1	45	152 *	0.31
1790.3	550	3.5			50.4	* 1790.3 T	573 3.6	3700 *	1805.3	43 *	1811.3	71	479 *	1.00
1813.1	1449	9.3			73.1	* 1813.1 T	1472 9.3	2220 *	1825.8	64 *	1832.6	93	932 *	1.76
1832.5	2617	16.7			92.5	* 1832.5 T	2640 16.9	1380 *	1837.3	77 *	1840.3	100	1154 *	2.35
SITE WE-3603														
SITE RATING	(1)													
1917.1	0	0.0			7.1	* 1933.6 E	686 5.4	570 *	1936.0	101 *	1939.1	29	64 *	*****
1924.0	100	0.8			14.0	* 1934.5 E	763 6.1	610 *	1936.8	106 *	1939.8	30	70 *	0.30
1931.3	484	3.8			21.4	* 1937.8 E	1108 8.8	560 *	1940.3	127 *	1943.3	33	95 *	0.85
1939.3	1251	9.8			29.2	* 1943.8 E	1889 15.0	490 *	1946.1	171 *	1950.1	40	157 *	1.48
1944.5	1984	15.7			34.5	* 1947.0 E	2422 19.2	450 *	1949.5	196 *	1952.5	42	182 *	1.85

NOTES - (1) COSTS ARE BASED ON 1974 S.C.S. DESIGN CRITERIA AND COST DATA.

(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.

(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

\*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*

## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-WESTFIELD										SUBWATERSHED WESTFIELD RIVER									
BENEFICIAL POOL										***** DESIGN * DAM *****									
*****										***** HIGH WATER * *****									
*****										***** TOP * *****									
*****										***** ELEV * *****									
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## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

30

STUDY AREA-WESTFIELD										SUBWATERSHED WESTFIELD RIVER									
BENEFICIAL POOL										DESIGN * DAM									
EMERGENCY SPILLWAY										HIGH WATER *									
COST / SURF AC										COST PER AC FT									
AREA (AC)										ELEV AREA * TOP									
DEPTH AT DAM (FT)										STORAGE AT CREST									
CREST ELEV * TYPE										AC FT IN									
USGS QUAD-ASHFIELD										USGS QUAD-ASHFIELD									
100-YR PRIN SPWY DESIGN STORM										100-YR PRIN SPWY DESIGN STORM									
DA= 4.93 SQ MI = 3155 AC										LATITUDE 42-31-13 LONGITUDE 72-51-56									
STREAM WATER QUALITY (B)										RUNOFF = 8.20 IN, PEAK FLOW = 1373 CFS									
SITE RATING (1)										SITE RATING (1)									
ELEV (MSL) AC FT IN										ELEV (MSL) AC FT IN									
1387.1 0 0.0										1387.1 0 0.0									
1393.4 100 0.4										1393.4 100 0.4									
1412.4 1179 4.5										1412.4 1179 4.5									
1427.6 3337 12.7										1427.6 3337 12.7									
1441.8 6573 25.0										1441.8 6573 25.0									
1305.6 0 0.0										1305.6 0 0.0									
1311.1 100 0.2										1311.1 100 0.2									
1339.6 1954 4.4										1339.6 1954 4.4									
1363.1 5663 12.6										1363.1 5663 12.6									
1386.5 11227 25.0										1386.5 11227 25.0									
DA= 8.42 SQ MI = 5389 AC										LATITUDE 42-30-33 LONGITUDE 72-51-02									
STREAM WATER QUALITY (B)										RUNOFF = 8.20 IN, PEAK FLOW = 1932 CFS									
SITE RATING (1)										SITE RATING (1)									
1305.6 0 0.0										1305.6 0 0.0									
1311.1 100 0.2										1311.1 100 0.2									
1339.6 1954 4.4										1339.6 1954 4.4									
1363.1 5663 12.6										1363.1 5663 12.6									
1386.5 11227 25.0										1386.5 11227 25.0									
DA= 1.63 SQ MI = 1043 AC										LATITUDE 42-30-38 LONGITUDE 72-50-16									
STREAM WATER QUALITY (B)										RUNOFF = 8.20 IN, PEAK FLOW = 498 CFS									
SITE RATING (1)										SITE RATING (1)									
1393.8 0 0.0										1393.8 0 0.0									
1402.0 100 1.2										1402.0 100 1.2									
1417.4 446 5.1										1417.4 446 5.1									
1434.9 1137 13.1										1434.9 1137 13.1									
1449.1 2173 25.0										1449.1 2173 25.0									
NOTES - (1) COSTS ARE BASED ON 1974 S.C.S. DESIGN CRITERIA AND COST DATA.										NOTES - (1) COSTS ARE BASED ON 1974 S.C.S. DESIGN CRITERIA AND COST DATA.									
(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.										(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.									
(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE										(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE									
(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.										(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.									
(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE										(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE									
CONSIDERED ACCURATE TO THAT DEGREE.										CONSIDERED ACCURATE TO THAT DEGREE.									
** DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. **										** DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. **									

DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION.



## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-WESTFIELD

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BENEFICIAL POOL

SUBWATERSHED WESTFIELD RIVER

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EMERGENCY SPILLWAY

DAM \* SAFE

[illegible]

SITE-WF-3612

SITE RATING	SITE RATING (1)	STREAM WATER QUALITY (B)	100-YR PRIN	SPWY DESIGN	STORM	RUNOFF = 8.20 IN,	PEAK FLOW =	752 CFS					
1902.6	0	0.0	12.7 *	1928.1 E	828	6.3	620 *	1930.6	93 *	1934.8	45	96 *	*****
1911.8	100	0.8	21.7 *	1911.8 T	120	0.8	5570 *	1924.6	62 *	1930.6	41	73 *	0.30
1925.8	630	4.8	35.8 *	1934.3 E	1401	10.7	540 *	1936.6	116 *	1940.6	51	135 *	1.00
1937.1	1690	12.8	47.0 *	1941.6 F	2286	17.4	450 *	1944.0	146 *	1947.1	57	194 *	1.75
1947.5	3132	23.9	57.5 *	1947.5 T	3151	24.0	600 *	1950.0	171 *	1953.0	63	264 *	2.22

SITE-WE-3613

[illegible]

SITE-WE-3614

[illegible]

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 NOTES - (1) COSTS ARE BASED ON 1974 S.C.S. DESIGN CRITERIA AND COST DATA.  
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(12) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

\*\*\* DU NUI USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*\*





# SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

## STUDY AREA-WESTFIELD

## SUBWATERSHED WESTFIELD RIVER

### BENEFICIAL POOL

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## SUBWATERSHED WESTFIELD RIVER

## DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. ##





# SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-WESTFIELD										SUBWATERSHED WESTFIELD RIVER										
BENEFICIAL POOL										EMERGENCY SPILLWAY										
ELEV	STORAGE	COST PER AC FT	AREA (AC)	COST (\$)	DEPTH AT DAM (FT)	CREST ELEV (MSL)	STORAGE AT CREST	COST PER AC FT	DESIGN * HIGH WATER * DAM * YIELD * SAFE	ELEV	STORAGE	COST PER AC FT	AREA (AC)	COST (\$)	DEPTH AT DAM (FT)	CREST ELEV (MSL)	STORAGE AT CREST	COST PER AC FT	DESIGN * HIGH WATER * DAM * YIELD * SAFE	
(MSL)	AC FT IN	(AC)	(AC)	(AC)	(AC)	(AC)	(AC)	(AC)	(AC)	(MSL)	AC FT IN	(AC)	(AC)	(AC)	(AC)	(AC)	(AC)	(AC)	(AC)	(MSL)
DA= 0.99 SQ MI = 634 AC										USGS QUAD-WESTHAMPTON										
STREAM WATER QUALITY (B)										100-YR PRIN SPWY DESIGN STORM										
SITE RATING (2)										LATITUDE 42-19-53 LONGITUDE 72-49-32										
SITE-WE-3634										RUNOFF = 8.10 IN, PEAK FLOW = 299 CFS										
1109.1	0	0.0	2	7690	32.4	9.1	1151.1	E	352	6.6	1860	1153.5	24	1158.6	59	178	100	274	383	568
1132.4	100	1.9	8	3200	50.6	19	1161.6	E	634	12.0	1530	1163.9	36	1168.1	68	274	383	568	178	
1149.1	303	5.6	36	1840	13.3	710	1170.6	E	980	18.6	1330	1173.0	48	1176.6	77	383	568	178	100	
1164.1	710	13.3	55	1360	25.0	1320	1182.1	E	1591	30.0	1130	1184.5	63	1188.1	88	568	178	100	274	
1177.6	1320	25.0																		
SITE RATING (1)										LATITUDE 42-18-11 LONGITUDE 72-52-52										
SITE-WE-3635										RUNOFF = 8.10 IN, PEAK FLOW = 212 CFS										
982.4	0	0.0	5	2300	9.7	2.4	998.3	E	326	6.1	520	1000.5	30	1003.8	24	16	22	48	79	112
989.6	100	1.9	22	700	9.6	9.7	1002.1	E	444	8.3	520	1004.1	33	1007.5	28	22	48	79	112	
1004.4	507	9.6	33	510	17.2	24.4	1012.9	E	834	15.7	430	1014.8	44	1018.0	38	48	79	112	16	
1014.9	913	17.2	44	450	25.0	34.9	1021.4	E	1236	23.4	380	1023.1	53	1026.3	46	79	112	16	22	
1023.1	1320	25.0	53			43.2	1027.6	E	1577	29.9	380	1029.8	60	1032.8	53	112	16	22	48	



EXISTING SITE WE-3640 (Crooked Pond)

Location: On Windsor Pond Brook about 2,500 feet upstream from Main Street (State Route 116) in Plainfield, Massachusetts.

Plainfield, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
1,746	30	8	250	0.39

Potential for Expansion: The size of the existing reservoir surface area in relation to the drainage area limits expansion potential.

Remarks: The dam is an earthfill structure about 200 feet long with rock riprap on the upstream slope. The spillway system is an old concrete drop structure. The weir section is 8 feet long and directs water to a 3 foot x 2 foot concrete box channel. The wingwalls and concrete box are deteriorating. The downstream slope of the dam has dense vegetation.

Ownership and Use: The pond is owned by the Commonwealth of Massachusetts, Department of Natural Resources and is used for recreation.

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EXISTING SITE WE-3641 (Ford Pond)

Location: On an unnamed tributary to the Swift River about 2,800 feet downstream from Bug Hill Road in Ashfield, Massachusetts.

Ashfield, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
1,435	10	12	1,350	2.11

Potential for Expansion: Raising the present pool level by 25 feet would nearly quadruple the existing surface area. A power line and 2 houses would be affected.

Remarks: The dam is an earthfill structure about 130 feet long. The spillway is a 20-foot long stone weir having a maximum head of 3 feet. Some light brush and vegetation is on both slopes of the dam. The dam appears to be well maintained.

Ownership and Use: The pond is part of the Leroy Ford estate and is used for recreation.

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EXISTING SITE WE-3642 (Damon Pond)

Location: On Fuller Brook at Damon Road in Chesterfield, Massachusetts.

Goshen, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
1,214	70	10	1,450	2.27

Potential for Expansion: Topography limits any significant increase in surface area. About 50 cottages would be affected by raising the pool level.

Remarks: The dam is an earthfill structure about 150 feet long. The spillway is a 30-foot long concrete chute weir having a maximum head of 1 foot and 6 inches of flashboards. The dam appears to be well maintained.

Ownership and Use: The pond is owned by the Damon Lake Corporation and is used for recreation.

EXISTING SITE WE-3643 (Hammond Pond)

Location: On Webster Brook about 3,000 feet downstream from Pond Hill Road in Goshen, Massachusetts.

Goshen, Mass. USGS quadrangle.

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
1,222	35	15	1,950	3.05

Potential for Expansion: Topography limits any significant increase in surface area. Many cottages surround the pond.

Remarks: The dam is formed by a road embankment. The spillway is a 30-foot long stone masonry weir having a maximum head of 2 feet with provisions for 6 inches of stoplogs. The dam appears to be well maintained.

Ownership and Use: The pond is owned by Hammond Acres Club, Inc. and is used for recreation.

EXISTING SITE WE-3644 (Scout Pond)

Location: On Webster Brook about 400 feet upstream from Main Road (State Route 143) in Chesterfield, Mass.

Goshen, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
1,156	35	20	3,750	5.86

EXISTING SITE WE-3644 (Scout Pond) (cont'd)

Potential for Expansion: Raising the present pond level by 40 feet would create a 200-acre surface area. Old Chesterfield Road and a Boy Scout Camp area would be affected.

Remarks: The dam is an earthfill structure about 200 feet long. The spillway is a 40-foot long straight drop concrete weir having a maximum head of 2 feet. A 15-foot wide concrete emergency spillway is located near the center of the dam.

Ownership and Use: The pond is owned by the Great Trails Council, Boy Scouts of America, and is used for recreation.

EXISTING SITE WE-3645 (Conwell Pond)

Location: On an unnamed tributary of the Little River about 2,500 feet upstream from Ireland Street in Worthington, Massachusetts.

Chester, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
995	1	12	50	0.08

Potential for Expansion: The small drainage area limits expansion potential.

Remarks: The dam is a rock and earthfill structure about 120 feet long. The downstream slope is a vertical rock wall. The entire structure is covered with dense trees and brush. No outlet structure could be located.

Ownership and Use: The pond is owned by Mrs. L. Conwell and is used for recreation.

EXISTING SITE WE-3646 (Little Gallilee Pond)

Location: On Jackson Brook about 100 feet upstream from Ireland Street in the towns of Chesterfield and Worthington, Massachusetts.

Chester, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
946	10	12	1,750	2.73

Potential for Expansion: Topography limits any significant increase in surface area.

Remarks: The dam is an earth and rock fill structure about 100 feet long with a 50-foot wide rock masonry weir located in the center of the dam. At the time of the field visit, the dam was being repaired for leakage.



EXISTING SITE WE-3646 (Little Gallilee Pond) (cont'd)

Ownership and Use: The pond is owned by Mr. John J. Sweeney and is used for recreation.

EXISTING SITE WE-3647 (Knightville Dam)

Location: On the Westfield River about 3,000 feet upstream from Worthington Road (State Route 112) in Huntington, Massachusetts.

Westhampton, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
--	--	160	104,950	163.98

Potential for Expansion: Increasing the height of the 160 foot dam to allow for permanent water storage would be expensive.

Remarks: The dam is a hydraulic earthfill structure about 1,200 feet long with a dumped rock shell. A curved concrete spillway about 410 feet wide is located on the right abutment. Gated outlet works, founded on bedrock, are located in the right abutment and are normally kept open. The reservoir has a flood control storage capacity of 49,000 acre-feet, equivalent to about 5.6 inches of runoff.

Ownership and Use: The dam is owned by the U.S. Army Corps of Engineers and is used for flood protection.

EXISTING SITE WE-3648 (Norwich Pond)

Location: On Pond Brook about 5,000 feet upstream from Searles Road in Huntington, Massachusetts.

Westhampton, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
1,105	105	14	600	0.94

Potential for Expansion: The size of the existing reservoir surface area in relation to the drainage area limits expansion potential.

Remarks: The dam is a rock fill structure about 200 feet long. The downstream slope is a vertical stone wall. The principal spillway is a 24-inch steel pipe. The emergency spillway, located near the center of the dam, is an 8-foot wide weir having a maximum head of 1 foot.

Ownership and Use: This is an enlarged Great Pond used for recreation. The dam is owned by the town of Huntington.





WE-3640  
Crooked Pond



WE-3642  
Damon Pond



WE-3641  
Ford Pond



WE-3643  
Hammond Pond

EXISTING RESERVOIRS  
SUBWATERSHED WE-36  
WESTFIELD RIVER







WE-3644  
Scout Pond



WE-3646  
Little Gallilee Pond



WE-3645  
Conwell Pond



WE-3647  
Knightville Dam

EXISTING RESERVOIRS  
SUBWATERSHED WE-36  
WESTFIELD RIVER

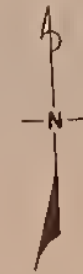








- LEGEND**
- WATERSHED BOUNDARY
  - DRAINAGE AREA ABOVE STRUCTURE
  - POTENTIAL SITE SHOWING BENEFICIAL POOL FOR LARGEST STRUCTURE
  - EXISTING POND OR RESERVOIR



Source—U.S.G.S. Quad Sheets  
 Ashfield, Mass.—1955  
 Goshen, Mass.—1955  
 Peru, Mass.—1959  
 Plainfield, Mass.—1956  
 Windsor, Mass.—1960  
 Worthington, Mass.—1956

(SHEET 1 OF 2)  
**WESTFIELD RIVER (WE-36)**  
**WESTFIELD STUDY AREA**  
 MASSACHUSETTS  
 EXISTING AND POTENTIAL RESERVOIR SITES  
 UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE

MATCH TO SHEET 2 OF 2







MATCH

LINE

3642

3621

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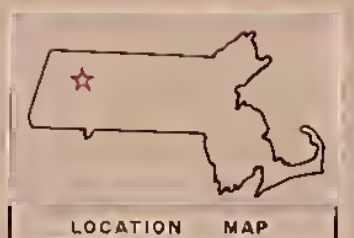
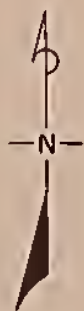
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3632

3634

LEGEND

- WATERSHED BOUNDARY
- DRAINAGE AREA ABOVE STRUCTURE
- POTENTIAL SITE SHOWING BENEFICIAL POOL FOR LARGEST STRUCTURE
- EXISTING POND OR RESERVOIR



Source - USGS Quad. Sheets  
Goshen-1955  
Chester-1956  
Worthington-1956  
Westhampton-1955

(SHEET 2 OF 2)

WESTFIELD RIVER (WE-36)  
WESTFIELD STUDY AREA  
MASSACHUSETTS

EXISTING AND POTENTIAL RESERVOIR SITES  
UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE





WESTFIELD STUDY AREA  
SITE DATA FOR

Subwatershed WE-37, Middle Branch - Westfield River

The Middle Branch subwatershed covers about 34,400 acres in Peru in Berkshire County; Chester in Hampden County; and Cummington, Huntington, Middlefield, and Worthington in Hampshire County.

The major stream in the subwatershed is the Middle Branch of the Westfield River which originates in Peru and flows southeasterly through Worthington, Middlefield, and Chester to Huntington. A large Corps of Engineers project, Littleville Lake, is located in Chester.

Elevations in the subwatershed range from a high of about 2,100 feet in Peru to about 400 feet in Huntington.

Nine potential reservoir sites and one existing reservoir were studied.

POTENTIAL SITE WE-3701

Location: On Trout Brook about 300 feet upstream from Mongue Road in Peru, Mass.

Peru, Mass. USGS quadrangle

Latitude: 42°27'27" Longitude: 73°01'20"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	East Windsor Road and	1775
	utilities	
	Barn	1820

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till); shallow to bedrock. Depth to bedrock in the foundation is estimated to be from 5 to 10 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

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POTENTIAL SITE WE-3702

Location: On Fuller Brook about 100 feet upstream of Mongue Road in Peru, Mass.

Peru, Mass. USGS quadrangle

Latitude: 42°26'10" Longitude: 73°01'38"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Mongue Road and utilities	1888
	Camp	1895

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till); shallow to schist bedrock. Depth to bedrock in the foundation is estimated to be from 5 to 10 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location. There is an old breached rock and earth-fill dam at the site.

This is substantially the same site as site M14B2-1 that was included in the Comprehensive Study of the Connecticut River Basin, U. S. Department of Agriculture, June 1970.

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POTENTIAL SITE WE-3703

Location: On the Middle Branch of the Westfield River about 625 feet upstream from West Worthington River Road in Worthington, Mass.

Worthington, Mass. USGS quadrangle

Latitude: 42°25'44" Longitude: 72°59'29"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Worthington River Road and utilities	1490
	House	1505
	House	1510
	House	1550
	Building	1550

Geologic Conditions: The left abutment is silty sand with gravel, cobbles, and boulders (glacial till). The right abutment is schist bedrock. Depth to bedrock in the foundation is estimated to be from 10 to 15 feet. Waterholding capabilities appear to be fair. Seepage is expected through the foundation. Borrow material for dam construction was located near the site.

POTENTIAL SITE WE-3703 (cont'd.)

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

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POTENTIAL SITE WE-3704

Location: On Glendale Brook about 1,600 feet downstream from Arthur Pease Road in Middlefield, Mass.

Becket, Mass. USGS quadrangle

Latitude: 42°22'23" Longitude: 73°01'07"

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	Arthur Pease Road	1760

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till); shallow to schist bedrock. Bedrock outcrops in the brook. Waterholding capabilities appear to be fair to good. Some leakage may take place through bedrock in the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

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POTENTIAL SITE WE-3705

Location: On Glendale Brook about 50 feet upstream from Root Road in Middlefield, Mass.

Becket, Mass. USGS quadrangle

Latitude: 42°21'34" Longitude: 73°00'17"

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	Root Road	1540
	Arthur Pease Road and utilities	1595
	Cone Road	1630

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). Depth to bedrock in the foundation is estimated to be from 10 to 15 feet. There is possible leakage through the foundation. Waterholding capabilities appear to be fair to good. There may be some seepage through the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

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POTENTIAL SITE WE-3706

Location: On an unnamed tributary to Glendale Brook about 200 feet upstream from Clark Wright Road in Middlefield, Mass.

Chester, Mass. USGS quadrangle

Latitude: 42°20'52" Longitude: 72°58'39"

Facilities Affected: None below elevation 1137

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). Depth to bedrock in the foundation is estimated to be 30 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

This is substantially the same site as site M4B2-3 that was included in the Comprehensive Study of the Connecticut River Basin, U. S. Department of Agriculture, June, 1970.

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POTENTIAL SITE WE-3707

Location: On Glendale Brook about 300 feet upstream from Clark Wright Road in Middlefield, Mass.

Chester, Mass. USGS quadrangle

Latitude: 42°20'54" Longitude: 72°58'06"

Facilities Affected:	Facility	Elevation
	Underground telephone cable	1080
	Barn and house	1100
	House	1110
	House and barn	1115
	Barn	1125
	Clark Wright Road and utilities	1128
	Wright Cemetery	1130
	House, 2 barns, shed	1130

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). Bedrock outcrops in the brook. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location. Developing the site above elevation 1086 will require a dike to the southeast of the reservoir.

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POTENTIAL SITE WE-3708

Location: On Kinney Brook about 100 feet upstream from Adams Road in Worthington, Mass.

Chester, Mass. USGS quadrangle

Latitude:  $42^{\circ}21'11''$  Longitude:  $72^{\circ}55'46''$

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Adams Road	1080
	Underground telephone cable	1100
	Patterson Road	1115

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till); shallow to bedrock. Bedrock outcrops in the brook. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

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POTENTIAL SITE WE-3709

Location: On Day Brook about 2,000 feet downstream from Crane Road in Chester, Mass.

Chester, Mass. USGS quadrangle

Latitude:  $42^{\circ}17'47''$  Longitude:  $72^{\circ}55'23''$

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Crane Road	1165

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). Depth to bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location. Developing the site above elevation 1155 would require a dike to the southeast of the reservoir.

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## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-WESTFIELD									
BENEFICIAL POOL									
SUBWATERSHED MIDDLE BRANCH									
EMERGENCY SPILLWAY									
DESIGN									
HIGH WATER									
DAM									
SAFE									
YIELD									
AT 95									
PERCENT									
CHANCE									
FILL									
VOL									
(1000									
CY)									
(MGD)									
LATITUDE 42-27-27									
LONGITUDE 73-01-20									
PEAK FLOW = 660 CFS									
RUNOFF = 8.20 IN, PEAK FLOW = 660 CFS									
DESIGN STORM									
USGS QUAD-PERU									
100-YR PRIN SPWY									
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# SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-WESTFIELD

SUBWATERSHED MIDDLE BRANCH

BENEFICIAL POOL	* EMERGENCY SPILLWAY	* DESIGN	* DAM	* SAFE
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[illegible][illegible][illegible]

\*\*\*\*\* SITE-WF-3704 \*\*\*\*\*  
\*\*\*\*\* DA= 0.83 SQ MI = 563 AC \*\*\*\*\*  
\*\*\*\*\* USGS QUAD-BECKET \*\*\*\*\*  
\*\*\*\*\* LATITUDE 42-22-23 \*\*\*\*\*  
\*\*\*\*\* LONGITUDE 73-01-07 \*\*\*\*\*

SITE RATING (1)	STREAM WATER QUALITY (A)	100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.20 IN, PEAK FLOW = 269 CFS
	*	*

11727.1	0	0.0	2	7.1	* 1758.3	E	296	6.3	1700	* 1760.6	23	*	1764.3	44	****
1745.0	100	2.0	4790	25.0	* 1745.0	T	107	2.3	4470	* 1751.8	14	*	1755.3	35	* 0.21

1757.8	279	5.9	2750	20	38650	37.8	* 1768.3	E	540	11.5	1420	* 1770.6	30	* 1774.0	54	192	* 0.41
771.6	637	13.6	1710	31	34900	51.6	* 1778.1	F	866	18.4	1260	* 1780.6	40	* 1783.6	64	295	* 0.64

1786.0	1173	25.0	1340	44	35980	66.0	*	1790.5	E	1386	29.5	1140	*	1792.6	49	*	1795.6	76	465	*	0.80
1788.0	1175	25.0	1340	44	35980	66.0	*	1790.5	E	1386	29.5	1140	*	1792.6	49	*	1795.6	76	465	*	0.80

STATION WE-3705  
 RA= 1.81 SQ MI = 1158 AC USGS QUAD-BECKET  
 LATITUDE 42-21-34 LONGITUDE 73-00-17

SITE RATING (1)	STREAM WATER QUALITY (A)	100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.10 IN, PEAK FLOW = 527 CFS
		*
		*

Year	1954.1	0	0.0	2	15.1	* 1561.5	T	401	4.1	2410	* 1589.5	25	* 1594.5	65	185	* ****
1955.1	1562.8	100	1.0	6090	32.8	* 1562.8	T	114	1.2	5320	* 1573.6	16	* 1577.0	47	69	* 0.27

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2
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1622.5	1862	19.2	1350	54	46070	92.5	*	1622.5	†	1877	19.4	1340	*	1627.3	58	*	1630.3	100	774	*	1.54
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SITE-WF-3706 \*\*\*\*\*  
 UAF 1.05 SO MI E \*\*\*\*\*  
 USCS QUAD-CHESTER \*\*\*\*\*  
 LATITUDE 42-20-52 \*\*\*\*\*  
 LONGITUDE 72-58-39 \*\*\*\*\*

SITE NO.	WATER QUALITY (A)	100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.10 IN, PEAK FLOW = 317 CFS	CONDUIT SIZE
DA-1003	100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.10 IN, PEAK FLOW = 317 CFS	CONDUIT SIZE	CONDUIT SIZE

1095.4	0	0.0	3	5.4 *	1119.3 E	344	6.1	970 *	1121.6	35 *	1125.9	36	62 *	***
1095.4	0	0.0	3	5.4 *	1119.3 E	344	6.1	970 *	1121.6	35 *	1125.9	36	62 *	***
1095.5	100	1.7	3820	18.5 *	1121.0 E	602	7.1	950 *	1123.4	38 *	1127.1	37	67 *	0.23
1095.6	100	1.7	3820	18.5 *	1121.0 E	602	7.1	950 *	1123.4	38 *	1127.1	37	67 *	0.23

[illegible]

Run	Time	Temp	Pressure	Flow	Conc	Yield	Quality
1	1125.5	10.1	1120	41	15300	55.2	1132.0
2	1132.1	15.6	960	52	16170	42.2	1132.1
3	1132.5	15.9	950	53	16010	42.5	1132.5
4	1138.6	15.7	950	52	16170	42.2	1138.6
5	1139.6	15.8	950	51	15940	42.0	1139.6
6	1140.1	15.8	950	51	15940	42.0	1140.1
7	1140.6	15.8	950	51	15940	42.0	1140.6
8	1141.1	15.8	950	51	15940	42.0	1141.1
9	1141.6	15.8	950	51	15940	42.0	1141.6
10	1142.1	15.8	950	51	15940	42.0	1142.1
11	1142.6	15.8	950	51	15940	42.0	1142.6
12	1143.1	15.8	950	51	15940	42.0	1143.1
13	1143.6	15.8	950	51	15940	42.0	1143.6
14	1144.1	15.8	950	51	15940	42.0	1144.1
15	1144.6	15.8	950	51	15940	42.0	1144.6
16	1145.1	15.8	950	51	15940	42.0	1145.1
17	1145.6	15.8	950	51	15940	42.0	1145.6
18	1146.1	15.8	950	51	15940	42.0	1146.1
19	1146.6	15.8	950	51	15940	42.0	1146.6
20	1147.1	15.8	950	51	15940	42.0	1147.1
21	1147.6	15.8	950	51	15940	42.0	1147.6
22	1148.1	15.8	950	51	15940	42.0	1148.1
23	1148.6	15.8	950	51	15940	42.0	1148.6
24	1149.1	15.8	950	51	15940	42.0	1149.1
25	1149.6	15.8	950	51	15940	42.0	1149.6
26	1150.1	15.8	950	51	15940	42.0	1150.1
27	1150.6	15.8	950	51	15940	42.0	1150.6
28	1151.1	15.8	950	51	15940	42.0	1151.1
29	1151.6	15.8	950	51	15940	42.0	1151.6
30	1152.1	15.8	950	51	15940	42.0	1152.1
31	1152.6	15.8	950	51	15940	42.0	1152.6
32	1153.1	15.8	950	51	15940	42.0	1153.1
33	1153.6	15.8	950	51	15940	42.0	1153.6
34	1154.1	15.8	950	51	15940	42.0	1154.1
35	1154.6	15.8	950	51	15940	42.0	1154.6
36	1155.1	15.8	950	51	15940	42.0	1155.1
37	1155.6	15.8	950	51	15940	42.0	1155.6
38	1156.1	15.8	950	51	15940	42.0	1156.1
39	1156.6	15.8	950	51	15940	42.0	1156.6
40	1157.1	15.8	950	51	15940	42.0	1157.1
41	1157.6	15.8	950	51	15940	42.0	1157.6
42	1158.1	15.8	950	51	15940	42.0	1158.1
43	1158.6	15.8	950	51	15940	42.0	1158.6
44	1159.1	15.8	950	51	15940	42.0	1159.1
45	1159.6	15.8	950	51	15940	42.0	1159.6
46	1160.1	15.8	950	51	15940	42.0	1160.1
47	1160.6						

[illegible]

NOTES - (1) COSTS ARE BASED ON 1974 S.C.S. DESIGN CRITERIA AND COST DATA.  
(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.  
(3) EMERGENCY SPILLWAY TYPE CODE C-CONCRETE, CUTE D-CONCRETE, OOR E-EXCAVATED, T- TWO SPILLWAYS, N- NONE

(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CRUISE, D=CONCRETE DROP, E=EXCAVATED, I=TWO SPILLWAYS, N=NONE

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY AND ARE NOT TO BE

(3) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

\*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*  
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EXISTING SITE WE-3710 (Littleville Reservoir)

Location: On the Middle Branch of the Westfield River about one mile upstream from its confluence with the Westfield River in Chester, Massachusetts.

Chester, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
460	275	164	334,700	522.97

Potential for Expansion: Increasing the height of the 164-foot dam to allow for additional storage would be expensive.

Remarks: The dam is an earthfill structure about 1,360 feet long. A concrete chute spillway, 400 feet wide is located on the right abutment. A dike about 935 feet long is connected with the east end of the dam by a bridge across the spillway. The reservoir provides a multiple-purpose flood control and water supply reservoir with a total storage capacity of 32,400 acre-feet of which 23,000 acre-feet or 8.2 inches of runoff are reserved for flood control.

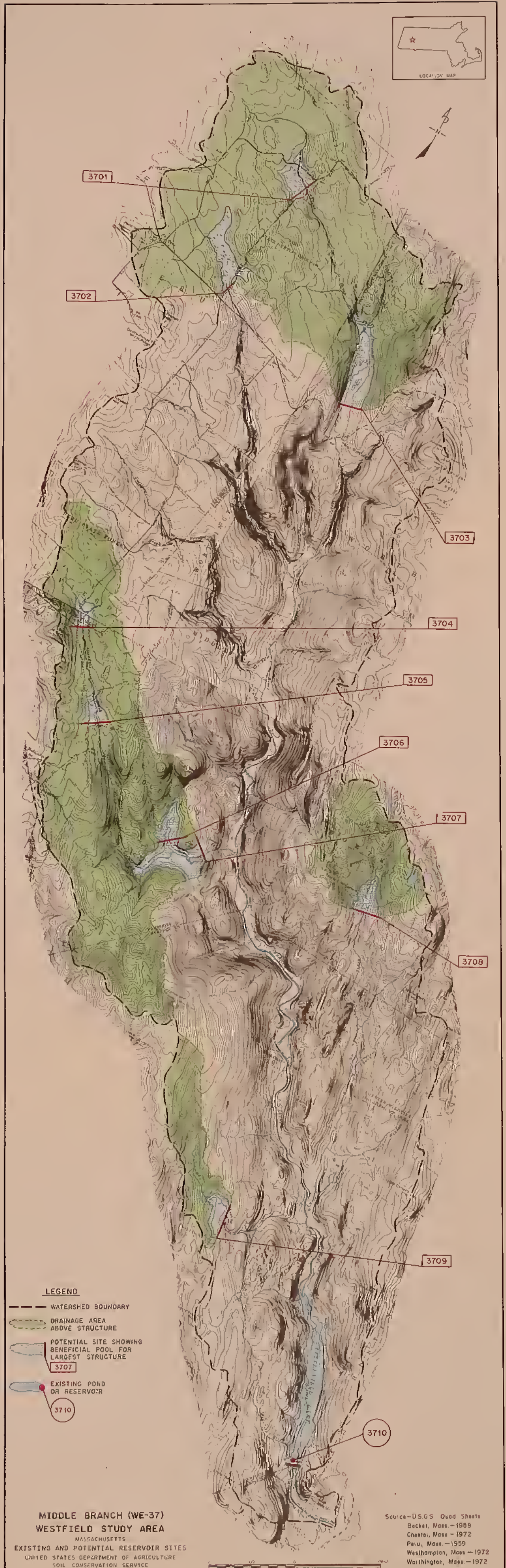
Ownership and Use: The dam is owned by the U.S. Army Corps of Engineers and the water supply is owned by the city of Springfield. The reservoir is used for flood control and water supply.

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EXISTING SITE WE-3710  
(Littleville Reservoir)



- LEGEND**
- WATERSHED BOUNDARY
  - DRAINAGE AREA ABOVE STRUCTURE
  - POTENTIAL SITE SHOWING BENEFICIAL POOL FOR LARGEST STRUCTURE
  - EXISTING POND OR RESERVOIR

MIDDLE BRANCH (WE-37)  
WESTFIELD STUDY AREA  
MASSACHUSETTS  
EXISTING AND POTENTIAL RESERVOIR SITES  
UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

Source—USGS Quad Sheets  
Becket, Mass.—1958  
Chester, Mass.—1972  
Pitts., Mass.—1959  
Westhampton, Mass.—1972  
Waltham, Mass.—1972





WESTFIELD STUDY AREA  
SITE DATA FOR

Subwatershed WE-38, West Branch - Westfield River

The West Branch subwatershed covers about 62,500 acres in Becket, Otis, Peru, and Washington in Berkshire County; Blandford and Chester in Hampden County; and Huntington and Middlefield in Hampshire County.

The major stream in the subwatershed is the West Branch of the Westfield River which forms in Becket and flows southeasterly through Middlefield and Chester to Huntington.

A Work Plan for Watershed Protection and Flood Prevention has been developed for the West Branch of the Westfield under authority of Public Law-566 (83rd Congress). The project, which has been authorized for construction, will include nine multiple-purpose reservoirs and two single-purpose flood control dams.

Elevations in the subwatershed range from a high of about 2,150 feet in Becket and Washington to about 400 feet in Huntington.

Eight potential reservoir sites and six existing reservoirs were studied.

POTENTIAL SITE WE-3801

Location: On Geer Brook about 1,800 feet downstream from Middlefield Road in Peru, Mass.

Peru, Mass. USGS quadrangle

Latitude: 42°23'37" Longitude: 73°03'19"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Skyline Trail and utilities	1592
	Smith Road	1615
	House	1625

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). Depth to bedrock in the foundation is estimated to be 10 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location. There are remnants of an old rock earth-fill dam and Button Factory foundation at the site.

Developing the site above elevation 1635 will require a dike to the west of the reservoir.

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POTENTIAL SITE WE-3802

Location: On Factory Brook about 600 feet upstream from the confluence with Geer Brook in Peru, Mass.

Peru, Mass. USGS quadrangle

Latitude:  $42^{\circ}23'15''$  Longitude:  $73^{\circ}03'18''$

Facilities Affected: None below elevation 1614

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till); shallow to schist bedrock. Bedrock outcrops in the brook. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location. There are remnants of an old rock and earthfill dam at the site.

\*\*\*\*\*

POTENTIAL SITE WE-3803

Location: On Depot Brook about 650 feet downstream from Stonehouse Road in Washington, Mass.

East Lee, Mass. USGS quadrangle

Latitude:  $42^{\circ}22'15''$  Longitude:  $73^{\circ}07'36''$

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	1 unimproved road and utilities	1555
	House and barn	1605
	Unimproved road utilities	1610

Geologic Conditions: Both abutments are silty sand, gravel, and boulders (glacial till). Depth to bedrock in the foundation is estimated to be from 10 to 15 feet. Waterholding capabilities appear to be good. There may be some seepage through valley fill in the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE WE-3804

Location: On Coles Brook about 950 feet downstream from its confluence with an unnamed brook. The confluence is 1,800 feet south of Matteau Road in Washington, Mass.

Becket, Mass. USGS quadrangle

Latitude:  $42^{\circ}22'25''$  Longitude:  $73^{\circ}05'05''$

Facilities Affected: None below elevation 1597

Geologic Conditions: Both abutments are silty sand, gravel, and boulders (glacial till) with many outcrops of gneiss bedrock. Depth to bedrock in the foundation is estimated to be from 5 to 10 feet. Bedrock outcrops in the brook. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The emergency spillway should be located on the abutment requiring the least rock excavation.

\*\*\*\*\*

POTENTIAL SITE WE-3805

Location: On Watson Brook about 2,900 feet upstream from Watson Road in Washington, Mass.

East Lee, Mass. USGS quadrangle

Latitude:  $42^{\circ}20'55''$  Longitude:  $73^{\circ}08'38''$

Facilities Affected: Telephone cable beneath dam site

Geologic Conditions: Both abutments are poorly graded sand or gravel (ice contact) with silty sand with gravel and cobbles (glacial till) high on both abutments. Depth to bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be fair. Seepage is expected through both abutments. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

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POTENTIAL SITE WE-3813

Location: On an unnamed tributary to Factory Brook about 1,600 feet upstream from the confluence with Factory Brook in Middlefield, Mass. The site is about 2,100 feet.

Becket, Mass. USGS quadrangle

Latitude:  $42^{\circ}20'20''$  Longitude:  $73^{\circ}01'27''$

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	House and barn	1395

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till); with outcrops of schist bedrock on the right abutment. Depth to bedrock in the foundation is estimated to be from 5 to 10 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE WE-3820

Location: On Goldmine Brook about 8,600 feet upstream from the Chester-Blandford town line in Blandford, Mass.

Blandford, Mass. USGS quadrangle

Latitude:  $42^{\circ}13'17''$  Longitude:  $72^{\circ}55'51''$

Facilities	None below elevation 1376
Affected:	

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). Depth to schist bedrock in the foundation is estimated to be from 20 to 30 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

Developing the site above elevation 1365 would require a dike to the north of the reservoir.

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POTENTIAL SITE WE-3821

Location: On Walker Brook about 1,000 feet upstream from Route 8 in Becket, Mass.

Becket, Mass. USGS quadrangle

Latitude: 42°15'55" Longitude: 73°03'12"

Facilities	Facility	Elevation
Affected:	State Route 8 & 20 and utilities	1370
	Heavy duty telephone cable	1370

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till), and poorly graded sand and gravel (glacial outwash) at the toes of both abutments and the valley floor. Depth to gneiss bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

The following sites will be constructed under the authority of the Watershed Protection and Flood Prevention Act (Public Law 566, 83rd Congress; 68 Stat. 666). The basic data concerning each site was obtained from the "Work Plan for Watershed Protection and Flood Prevention, West Branch of the Westfield River Watershed".

\*\*\*\*\*

PLANNED SITE WE-3807 (Upper Factory Site)

Location: On Factory Brook about 5,200 feet downstream from its confluence with Geer Brook in Middlefield, Mass.

Becket, Mass. USGS quadrangle

Latitude: 42°22'25" Longitude: 73°02'55"

The Upper Factory Site will be a multipurpose flood prevention, fish and wildlife structure. Of the total storage capacity of 2,320 acre-feet, 1,107 acre-feet is for flood prevention, 1,207 acre-feet is for fish and wildlife, and 6 acre-feet is for sediment storage. The fish and wildlife capacity consists of 803 acre-feet for low flow augmentation and 404 acre-feet for a fishery pool. The maximum surface area of the low flow augmentation pool will be 73 acres, with a drawdown depth of 16 feet. The surface area of the fish pool will be 34 acres with 43 percent of the surface area over 15 feet and a maximum depth of 35 feet.

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## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

59

STUDY AREA-WESTFIELD										SUBWATERSHED WEST BRANCH									
BENEFICIAL POOL										* DESIGN * HIGH WATER *									
*****										*****									
ELEV	STORAGE	COST	PER	AREA	COST/	DEPTH	CREST	STORAGE	EMERGENCY SPILLWAY	CCST	PER	ELEV	AREA	ELEV	TOP	HGT	VOL	FILL	PERCENT
(MSL)	AC FT	IN	AC	(\$)	AC	(FT)	TYPE	AT CREST	* *	AC FT	(\$)	(MSL)	(AC)	(MSL)	(CY)	(1000)	(CY)	(1000)	CHANGE
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# SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-WESTFIELD										SUBWATERSHED WEST BRANCH									
BENEFICIAL POOL										EMERGENCY SPILLWAY									
ELEV	STORAGE	COST PER AC FT	AREA (AC)	COST SURF AC (\$)	DEPTH AT DAM (FT)	CREST ELEV	STORAGE AT CREST	CCST PER AC FT	DESIGN HIGH WATER	DAM	YIELD AT 95 PERCENT CHANCE	FILL VOL (1000 CY)	TOP ELEV	HGT	LONGITUDE	PEAK FLOW	IN, PEAK FLOW	73-03-12	703 CFS
(MSL)	AC FT	IN	(\$)	(AC)	(\$)	TYPE	AC FT	IN	(MSL)	(AC)	(MSL)	(CY)	(MSL)	FT	42-13-17	8.10	IN, PEAK FLOW	73-03-12	703 CFS
DA= 0.69 SQ MI = 442 AC										USGS QUAD-BLANFORD									
STREAM WATER QUALITY (B)										100-YR PRIN SPWY DESIGN STORM									
SITE RATING (1)										100-YR PRIN SPWY DESIGN STORM									
DA= 2.33 SQ MI = 1491 AC										USGS QUAD-BECKET									
STREAM WATER QUALITY (B)										100-YR PRIN SPWY DESIGN STORM									
SITE RATING (1)										100-YR PRIN SPWY DESIGN STORM									
1356.0	0	0.0	5	2140	7810	6.4	309	8.3	1365.1	E	214	5.8	680	1367.3	34	1370.8	16	11	0.20
1361.4	100	2.7	27	1280	7590	9.2	338	9.2	1367.9	E	309	8.3	690	1370.1	38	1373.4	18	16	0.29
1364.1	182	4.9	31	930	8780	14.1	533	14.5	1368.6	E	533	14.5	600	1371.1	40	1374.1	19	18	0.42
1369.1	346	9.3	37	900	10160	17.5	485	13.2	1373.6	E	485	13.2	890	1375.6	50	1378.6	24	33	0.49
1372.5	479	13.0	42						1372.5	T				1376.1		1379.8	25	38	
SITE-WE-3820										SITE-WE-3821									
SITE RATING (1)										SITE RATING (1)									
1307.5	0	0.0	4	10560	90750	23.0	119	1.0	1343.1	T	516	4.1	3100	1353.0	40	1360.5	62	340	0.30
1321.0	100	0.8	12	3280	63130	49.0	620	5.0	1321.0	T	620	5.0	3180	1333.4	18	1339.3	41	126	0.96
1347.1	601	4.8	31	1480	40030	70.8	2463	19.7	1347.1	T	2463	19.7	960	1360.3	50	1367.4	69	440	1.66
1368.8	1603	12.8	59	1150	43030	91.6	3125	25.2	1381.3	E	3125	25.2	1150	1383.6	77	1388.6	91	865	2.13
1389.6	3107	25.0	83						1389.6	T				1396.0	91	1399.8	102	1166	

NOTES - (1) COSTS ARE BASED ON 1974 S.C.S. DESIGN CRITERIA AND COST DATA.

(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.

(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

\*\*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*\*

PLANNED SITE WE-3808 (Upper Coles Site)

Location: On Coles Brook about 2,100 feet upstream from Middlefield Road in Washington, Mass.

Becket, Mass. USGS quadrangle

Latitude: 42°21'26" Longitude: 73°04'03"

The Upper Coles multipurpose flood prevention and fish and wildlife structure will have a total capacity of 3,267 acre-feet. This includes 1,187 acre-feet for flood prevention, 2,077 acre-feet for low flow augmentation for fish and wildlife, and 3 acre-feet for sediment storage. The maximum surface area of the low flow pool will be 139 acres with a drawdown depth of 22 feet.

\*\*\*\*\*

PLANNED SITE WE-3809 (Factory Site)

Location: On Factory Brook about 1,500 feet upstream from Reservoir Road in Middlefield, Mass.

Becket, Mass. USGS quadrangle

Latitude: 42°21'00" Longitude: 73°02'07"

The Factory Site is for multipurpose flood prevention and recreation development. Of a total storage of 5,706 acre-feet, 1,257 acre-feet will be for flood prevention, 4,443 acre-feet for recreation and 6 acre-feet for sediment storage. The surface area of the recreation pool will be 161 acres, with a maximum depth of 50 feet.

\*\*\*\*\*

PLANNED SITE WE-3810 (Shaker Site)

Location: On Shaker Mill Brook about 3,000 feet upstream from Brooker Hill Road in Becket, Mass.

Becket, Mass. USGS quadrangle

Latitude: 42°19'51" Longitude: 73°06'52"

The Shaker multipurpose flood prevention, fish and wildlife structure will have 1,139 acre-feet for floodwater storage, 771 acre-feet for fish and wildlife storage and 5 acre-feet for sediment storage for a total capacity of 1,915 acre-feet. The fish and wildlife capacity is made up of 666 acre-feet for low flow augmentation and 105 acre-feet for a fishery pool. The maximum surface area of the low flow augmentation pool at elevation 1603 will be 49 acres. The drawdown depth will be 23 feet or to the elevation of the fishery pool at elevation 1580. The 14 acre fishery pool will have a maximum depth of 35 feet, with 16% of the pool over 15 feet in depth. Principal features are shown on Figure 8.

\*\*\*\*\*



PLANNED SITE WE-3811 (Brooker Site)

Location: On Shaker Mill Brook about 2,050 feet upstream from Lover's Lane Road in Becket, Mass.

Becket, Mass. USGS quadrangle

Latitude:  $42^{\circ}20'05''$  Longitude:  $73^{\circ}05'48''$

The Brooker Site is a single purpose floodwater retarding structure. Of a total capacity of 650 acre-feet, 643 acre-feet will be for floodwater storage and 7 acre-feet for sediment storage.

\*\*\*\*\*

PLANNED SITE WE-3812 (Coles Site)

Location: On Coles Brook about 1,900 feet downstream from Ryan Road in Middlefield, Mass.

Becket, Mass. USGS quadrangle

Latitude:  $42^{\circ}20'17''$  Longitude:  $73^{\circ}03'05''$

The Coles multipurpose flood prevention and fish and wildlife structure will have 417 acre-feet for flood prevention, 146 acre-feet for fish and wildlife and 4 acre-feet for sediment storage for a total capacity of 567 acre-feet. The fishery pool will have a surface area of 12 acres, with a maximum water depth of 45 feet. About 51 percent of the surface area will be over 15 feet deep.

\*\*\*\*\*

PLANNED SITE WE-3814 (Rudd Site)

Location: On Rudd Pond Brook about 900 feet upstream from State Route 8 in Becket, Mass.

Becket, Mass. USGS quadrangle

Latitude:  $42^{\circ}18'39''$  Longitude:  $73^{\circ}05'31''$

The Rudd Site multipurpose flood prevention and fish and wildlife structure will have total storage capacity of 1,103 acre-feet. There will be 579 acre-feet for flood prevention, 521 acre-feet for fish and wildlife, and 3 acre-feet for sediment. The fish and wildlife capacity is made up of 425 acre-feet for low flow augmentation and 96 acre-feet for a wildlife pool.

\*\*\*\*\*

PLANNED SITE WE-3815 (Walker Site)

Location: On Walker Brook about 1,600 feet upstream from Route 8 in Becket, Mass.

Becket, Mass. USGS quadrangle

Latitude:  $42^{\circ}16'08''$  Longitude:  $73^{\circ}02'16''$

The Walker multipurpose flood prevention and fishery structure will have 2,110 acre-feet for flood prevention, 432 acre-feet for fish and wildlife and 8 acre-feet for sediment storage for a total storage capacity of 2,550 acre-feet. The fish pool will have a surface area of 35 acres with 40 percent of the area over 15 feet in depth. The maximum depth of the fish pool will be 25 feet.

\*\*\*\*\*

PLANNED SITE WE-3817 (Cherry Site)

Location: On Cook Brook about 4,100 feet upstream from Chester Hill Road in Chester, Mass.

Chester, Mass. USGS quadrangle

Latitude:  $42^{\circ}16'20''$  Longitude:  $73^{\circ}55'04''$

This will be a multipurpose flood prevention and fish and wildlife structure. The site reservoir will have a total capacity of 1,110 acre-feet with 631 acre-feet for flood storage, 472 acre-feet for fish and wildlife and 7 acre-feet for sediment storage. The surface area of the fishery pool will be 36 acres. The maximum depth will be 30 feet, with 34 percent of the area over 15 feet in depth.

\*\*\*\*\*

PLANNED SITE WE-3818 (Cushman Site)

Location: On Cushman Brook about 600 feet upstream from Quarry Road in Becket, Mass.

Becket, Mass. USGS quadrangle

Latitude:  $42^{\circ}15'12''$  Longitude:  $73^{\circ}00'55''$

This multipurpose flood prevention and fish and wildlife structure will have a total storage of 462 acre-feet, with 315 acre-feet for flood prevention, 84 acre-feet for fish and wildlife, 62 acre-feet for design storage, and one acre-foot for sediment storage. The wildlife pool will have a maximum surface area of 20 acres with a maximum depth of water of 16 feet. There will be 11 acres with a water depth from 0 to 3 feet.

\*\*\*\*\*



PLANNED SITE WE-3819 (Blandford Site)

Location: On an unnamed tributary to Walker Brook about 1,400 feet upstream from the Becket-Chester town line in Chester, Mass.

Chester, Mass. USGS quadrangle

Latitude: 42°15'14" Longitude: 72°59'57"

This single-purpose floodwater retarding structure will have a total storage capacity of 247 acre-feet, which includes 246 acre-feet for floodwater storage and 1 acre-foot is for sediment storage. Principal features are shown on Figure 1.

\*\*\*\*\*

EXISTING SITE WE-3825 (Yokum Pond)

Location: On Yokum Brook at Yokum Pond Road in Becket, Massachusetts.

East Lee, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
1,766	90	10	450	0.70

Potential for Expansion: The small drainage area limits expansion potential.

Remarks: The dam is an earthfill structure about 30-feet long. The spillway is a 15-foot long concrete weir having a maximum head of 2 feet and outletting to a 4 x 4 foot concrete box culvert beneath Yokum Pond Road. The dam is heavily vegetated.

Ownership and Use: This is an enlarged Great Pond used for recreation. The dam is owned by Fred Mercer.

\*\*\*\*\*

EXISTING SITE WE-3826 (Center Pond)

Location: On an unnamed tributary to Walker Brook about 1,000 feet upstream from State Route 8 in Becket, Massachusetts.

Becket, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
1,540	90	10	850	1.33

Potential for Expansion: The size of the existing reservoir surface area in relation to the drainage area limits expansion potential.

Remarks: The dam is an earthfill structure about 100 feet long. The upstream slope is a vertical concrete wall. The spillway consists of two, 10-foot long, concrete weirs and a gatehouse.

Ownership and Use: This is an enlarged Great Pond used for recreation. The dam is owned by Mr. R. Mettler.

\*\*\*\*\*

EXISTING SITE WE-3827 (Rudd Pond)

Location: On Rudd Pond Brook about 6,000 feet upstream from State Route 8 in Becket, Massachusetts.

Becket, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
1,674	70	15	600	0.94

Potential for Expansion: The size of the existing reservoir surface area in relation to the drainage area limits expansion potential.

Remarks: The dam is an earthfill structure about 150 feet long with rock riprap on the upstream slope extending below the waterline. The spillway is a 20-foot long rock masonry weir 4 feet deep. A gatehouse is located near the center of the dam.

Ownership and Use: The pond is owned by the Y.M.C.A. and is used for recreation.

\*\*\*\*\*



EXISTING SITE WE-3828 (Huntington Reservoir)

Location: On Cold Brook about 2,500 feet upstream from U.S. Route 20 in Blandford, Massachusetts.

Blandford, Mass. USGS quadrangle.

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
600	1	30	650	1.02

Potential for Expansion: Very steep topography limits any significant increase in surface area or storage volume.

Remarks: The dam is a 100-foot long earthfill structure. The principal spillway is a 20-foot long concrete weir having a maximum head of 3 feet and a stepped outlet. A gatehouse is located to the right of the spillway. Trees and brush are growing on the dam.

Ownership and Use: The reservoir is owned by the town of Huntington and is used for water supply.

\*\*\*\*\*

EXISTING SITE WE-3829 (Robin Hood Lake)

Location: On the West Branch of Walker Brook about 4,000 feet downstream from Jacobs Ladder Road in Becket, Massachusetts.

Becket, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
1,540	70	8	1,150	1.80

Potential for Expansion: Topography limits any significant increase in surface area. Many cottages would be affected by raising the level of the lake.

Remarks: The dam is an earthfill structure about 300 feet long with a 12-foot top width. The principal spillway is a combination 20 feet long masonry weir and chute with provisions for flashboards. The dam is vegetated and appears to be well maintained.

Ownership and Use: The lake is owned by Robin Hood Development Company and is used for recreation.

\*\*\*\*\*

WE-3825  
Yokum Pond



WE-3828  
Huntington Reservoir



WE-3826  
Center Pond



WE-3829  
Robin Hood Lake



WE-3827  
Rudd Pond

EXISTING RESERVOIRS  
SUBWATERSHED WE-38  
WEST BRANCH - WESTFIELD RIVER









Source—USGS Quad Sheets  
 Becket, Mass.—1958  
 Blanford, Mass.—1972  
 Chester, Mass.—1972  
 East Lee, Mass.—1973  
 Peru, Mass.—1959  
 Pittsfield East, Mass.—1973  
 Tolland Center, Mass.—1969  
 Otis, Mass.—1973

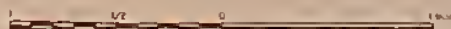


**LEGEND**

- WATERSHED BOUNDARY
- - - DRAINAGE AREA ABOVE STRUCTURE
- POTENTIAL SITE SHOWING BENEFICIAL POOL FOR LARGEST STRUCTURE
- SITE AUTHORIZED FOR CONSTRUCTION UNDER PUBLIC LAW 566
- EXISTING POND OR RESERVOIR

**WEST BRANCH-WESTFIELD RIVER (WE-38)  
 WESTFIELD STUDY AREA**

EXISTING AND POTENTIAL RESERVOIR SITES  
 UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE







WESTFIELD STUDY AREA  
SITE DATA FOR

Subwatershed WE-39, Moose Meadow Brook

The Moose Meadow Brook subwatershed covers about 19,500 acres in Huntington in Hampden County, and Blandford, Montgomery, Russell, and Westfield in Hampshire County.

The subwatershed includes the area which drains into the Westfield River from the USGS gaging station in Huntington, downstream to the confluence of Powdermill Brook in Westfield.

Elevations in the subwatershed range from a high of about 1,300 feet in Montgomery to a low of about 110 feet in Westfield.

Twelve potential reservoir sites and five existing reservoirs were studied.

POTENTIAL SITE WE-3901

Location: On Roaring Brook about 3,300 feet downstream from Emerson Gorman Road in Huntington, Mass.

Westhampton, Mass. USGS quadrangle

Latitude:  $42^{\circ}16'06''$  Longitude:  $72^{\circ}50'13''$

Facilities Affected: None below elevation 990

Geologic Conditions: Both abutments are silty sand with gravel, cobbles and boulders (glacial till), with ice contact sand and gravel at the toe of both abutments. Depth to schist bedrock in the foundation is estimated to be 20 to 30 feet. Waterholding capabilities appear to be fair to good. There may be slight leakage through both abutments. Borrow material for dam construction was located near the site.

Engineering Notes:q The left abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*



POTENTIAL SITE WE-3902

Location: On Roaring Brook about 7,800 feet downstream from Emerson Gorman Road in Huntington, Mass.

Westhampton, Mass. USGS quadrangle

Latitude:  $42^{\circ}15'33''$  Longitude:  $72^{\circ}50'39''$

Facilities Affected: None below elevation 932

Geologic Conditions: Both abutments are outwash sand and gravel near the toes with silty sand (glacial till) at higher elevations. Bedrock outcrops in the brook. Waterholding capabilities appear to be fair with possible seepage at the toe of both abutments. Borrow material for dam construction was located near the site.

Engineering Notes: The emergency spillway should be excavated in that abutment that would have least rock excavation.

Public Ownership: That portion of the dam and reservoir that is east of Roaring Brook and south of latitude  $42^{\circ}15'46''$  would be in Huntington State Forest.

The portion of the dam site and the reservoir located on the east side of Roaring Brook and south of latitude  $42^{\circ}15'46''$  would be located within the Huntington State Forest.

\*\*\*\*\*

POTENTIAL SITE WE-3903

Location: On Roaring Brook about 50 feet downstream from the confluence with Horse Hill Brook in Huntington, Mass.

Woronoco, Mass. USGS quadrangle

Latitude:  $42^{\circ}14'36''$  Longitude:  $72^{\circ}50'38''$

Facilities Affected: None below elevation 727

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till), with numerous outcrops of mica schist bedrock at the toe of both abutments. Mica schist with pegmatite and granite lenses outcrops in the brook. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

Public Ownership: The portion of the dam site and the reservoir located on the east side of Roaring Brook would be located within the Huntington State Forest.

\*\*\*\*\*

POTENTIAL SITE WE-3904

Location: On Roaring Brook about 600 feet downstream from Carrington Road in Montgomery, Mass.

Woronoco, Mass. USGS quadrangle

Latitude: 42°13'45" Longitude: 72°51'26"

Facilities Affected:	Facility	Elevation
	Powerline on wooden poles	375
	Carrington Road and utilities	390
	Camp cottage	430
	Two cottages	435

Geologic Conditions: Both abutments are outwash sand and gravel to about elevation 470, then silty sand with gravel, cobbles, and boulders (glacial till). Depth to schist bedrock in the foundation is estimated to be 25 to 30 feet. Waterholding capabilities appear to be fair to poor. Seepage is expected through both abutments and the foundation. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location. Developing the site above elevation 435 would require a dike to the north of the reservoir.

\*\*\*\*\*

POTENTIAL SITE WE-3905

Location: On Moose Meadow Brook about 350 feet downstream from Main Road in Montgomery, Mass.

Woronoco, Mass. USGS quadrangle

Latitude: 42°12'55" Longitude: 72°49'07"

Facilities Affected:	Facility	Elevation
	Main Road	1060

Geologic Conditions: Both abutments are poorly graded sand and gravel (glacial outwash). Depth to schist bedrock in the foundation is estimated to be 25 to 30 feet. Waterholding capabilities appear to be poor. Seepage is expected through both abutments and the foundation. Pervious material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

Public Ownership: The dam site and part of the reservoir would be in the water supply watershed of the city of Westfield.

\*\*\*\*\*



POTENTIAL SITE WE-3906

Location: On Moose Meadow Brook about 300 feet upstream from Mountain House Road in Montgomery, Mass.

Woronoco, Mass. USGS quadrangle

Latitude: 42°11'51" Longitude: 72°48'29"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Old House Road and utilities	975
	House	985

Geologic Conditions: Both abutments are poorly graded sand or gravel (glacial outwash) and may be shallow to glacial till. Depth to schist bedrock in the foundation is estimated to be 30 to 40 feet. The waterholding capabilities appear to be poor. Seepage is expected through both abutments and the foundation. Previous borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

Public Ownership: The dam site and part of the reservoir would be in the water supply watershed of the city of Westfield.

\*\*\*\*\*

POTENTIAL SITE WE-3907

Location: On Moose Meadow Brook about 2,800 feet downstream from Mountain House Road in Montgomery, Mass.

Woronoco, Mass. USGS quadrangle

Latitude: 42°11'24" Longitude: 72°48'44"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Westfield Reservoir	918
	Westfield Reservoir buildings	952
	Tekoa Road	955

Geologic Conditions: Both abutments are poorly graded sand and gravel (outwash) and probably shallow to glacial till. Estimated depth to schist bedrock in the foundation is 20 to 30 feet. Waterholding capabilities appear to be fair. Seepage is expected through both abutments. Previous borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location. Developing the site above elevation 955 will require diking to the east and west of the dam site. Refer to Existing Site WE-3907 (Westfield Reservoir) for data on the existing dam and reservoir at this site.

Public Ownership: The site is owned by the city of Westfield.

\*\*\*\*\*

POTENTIAL SITE WE-3908

Location: On Moose Meadow Brook about 2,100 feet downstream from Tekoa Road in Montgomery, Mass.

Woronoco, Mass. USGS qudrangle

Latitude:  $42^{\circ}10'47''$  Longitude:  $72^{\circ}48'51''$

Facilities None below elevation 986  
Affected:

Geologic Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). Depth to schist bedrock in the foundation is estimated to be 5 to 10 feet; however, it may outcrop in the brook. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering The right abutment is recommended as the excavated emergency  
Notes: spillway location.

\*\*\*\*\*

POTENTIAL SITE WE-3909

Location: On Moose Meadow Brook about 500 feet upstream from Tekoa Road in Montgomery, Mass.

Woronoco, Mass. USGS quadrangle

Latitude:  $42^{\circ}10'05''$  Longitude:  $72^{\circ}48'35''$

Facilities None below elevation 627  
Affected:

Geologic Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). Pegmatite bedrock outcrops in the brook. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering The left abutment is recommended as the excavated emergency  
Notes: spillway location.

\*\*\*\*\*



POTENTIAL SITE WE-3910

Location: On an unnamed tributary to Moose Meadow Brook about 5,200 feet upstream from the Massachusetts Turnpike in Westfield, Mass.

Woronoco, Mass. USGS quadrangle

Latitude:  $42^{\circ}10'08''$  Longitude:  $72^{\circ}47'23''$

Facilities None below elevation 397  
Affected:

Geologic Conditions: The left abutment is silty sand with gravel, cobbles, and boulders (glacial till). The right abutment is outwash sand and gravel. Depth to triassic sandstone bedrock in the foundation is estimated to be 5 to 10 feet. Bedrock also outcrops in the brook about 300 feet downstream. Waterholding capabilities appear to be fair. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

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POTENTIAL SITE WE-3911

Location: On an unnamed tributary to Moose Meadow Brook about 2,900 feet upstream from the Massachusetts Turnpike in Westfield, Mass.

Woronoco, Mass. USGS quadrangle

Latitude:  $42^{\circ}09'16''$  Longitude:  $72^{\circ}47'39''$

Facilities None below elevation 367  
Affected:

Geologic Conditions: The left abutment is silty sand with gravel, cobbles, and boulders (glacial till). The right abutment is sand, gravel, and boulders (ice contact deposits). Depth to triassic conglomerate bedrock in the foundation is estimated to be 25 to 35 feet. Waterholding capabilities appear to be fair. Seepage is expected through the right abutment and the foundation. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE WE-3912

Location: On Moose Meadow Brook about 3,400 feet downstream from the Massachusetts Turnpike in Westfield, Mass.

Woronoco, Mass. USGS quadrangle

Latitude: 42°09'08" Longitude: 72°47'45"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	High tension lines	240

Geologic Conditions: Both abutments are sand and gravel (glacial outwash). Depth to triassic sandstone bedrock in the foundation is estimated to be 30 to 40 feet. Waterholding capabilities appear to be poor. Seepage is expected through both abutments and possibly through the foundation. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

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# SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-WFSTFIELD SURWATERSHED MOOSE MEADOW BROOK  
BENEFICIAL PCCL

ELEV	STORAGE	AC FT	IN	COST	AREA	SURF	AC	DEPTH	AT	CREST	STORAGE	AT	CREST	PER	ELEV	AREA	ELEV	TOP	DAM	DESIGN	HIGH WATER	SAFE	YIELD
(MSL)	AC FT	(B)	(FT)	(B)	(AC)	(B)	(B)	(FT)	(B)	(MSL)	AC FT	(B)	(MSL)	(B)	(B)	(AC)	(MSL)	(AC)	(B)	(B)	(B)	(B)	(B)
925.9	0	0.0	5.9	5.9	3	59470	21.5	21.5	109	1.7	575.0	1520	957.3	24	961.1	41	104	104	104	104	104	104	104
941.5	100	1.7	21.5	21.5	11	59470	21.5	21.5	109	1.7	575.0	1520	957.3	24	961.1	41	104	104	104	104	104	104	104
955.4	330	5.6	35.4	35.4	23	34600	35.4	35.4	632	10.7	1240	957.3	24	961.1	41	104	104	104	104	104	104	104	104
970.5	790	13.2	50.5	50.5	40	28670	50.5	50.5	1092	18.2	1050	957.3	24	961.1	41	104	104	104	104	104	104	104	104
984.5	1480	25.0	64.5	64.5	60	25320	64.5	64.5	1639	27.7	920	957.3	24	961.1	41	104	104	104	104	104	104	104	104

DA= 1.11 SQ MI = 710 AC USGS QUAD-WESTHAMPTON  
STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.10 IN, PEAK FLOW = 335 CFS

STUDY AREA-WFSTFIELD SURWATERSHED MOOSE MEADOW BROOK  
BENEFICIAL PCCL

ELEV	STORAGE	AC FT	IN	COST	AREA	SURF	AC	DEPTH	AT	CREST	STORAGE	AT	CREST	PER	ELEV	AREA	ELEV	TOP	DAM	DESIGN	HIGH WATER	SAFE	YIELD
(MSL)	AC FT	(B)	(FT)	(B)	(AC)	(B)	(B)	(FT)	(B)	(MSL)	AC FT	(B)	(MSL)	(B)	(B)	(AC)	(MSL)	(AC)	(B)	(B)	(B)	(B)	(B)
854.5	0	0.0	14.6	14.6	2	65050	31.2	31.2	115	1.1	7090	880	895.9	46	902.4	62	140	140	140	140	140	140	140
871.1	100	1.0	31.2	31.2	13	65050	31.2	31.2	115	1.1	7090	880	895.9	46	902.4	62	140	140	140	140	140	140	140
889.3	503	5.0	49.3	49.3	35	32150	49.3	49.3	518	5.1	2180	880	895.9	46	902.4	62	140	140	140	140	140	140	140
906.0	1310	13.0	66.1	66.1	60	20530	66.1	66.1	2017	20.0	610	880	895.9	46	902.4	62	140	140	140	140	140	140	140
923.1	2520	25.0	83.1	83.1	82	20530	83.1	83.1	3098	30.7	550	880	895.9	46	902.4	62	140	140	140	140	140	140	140

DA= 1.89 SQ MI = 1210 AC USGS QUAD-WESTHAMPTON  
STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.10 IN, PEAK FLOW = 571 CFS

STUDY AREA-WFSTFIELD SURWATERSHED MOOSE MEADOW BROOK  
BENEFICIAL PCCL

ELEV	STORAGE	AC FT	IN	COST	AREA	SURF	AC	DEPTH	AT	CREST	STORAGE	AT	CREST	PER	ELEV	AREA	ELEV	TOP	DAM	DESIGN	HIGH WATER	SAFE	YIELD
(MSL)	AC FT	(B)	(FT)	(B)	(AC)	(B)	(B)	(FT)	(B)	(MSL)	AC FT	(B)	(MSL)	(B)	(B)	(AC)	(MSL)	(AC)	(B)	(B)	(B)	(B)	(B)
653.4	0	0.0	23.4	23.4	3	136660	39.5	39.5	129	0.7	10510	2750	713.7	38	723.0	93	304	304	304	304	304	304	304
669.5	100	0.5	39.5	39.5	10	136660	39.5	39.5	129	0.7	10510	2750	713.7	38	723.0	93	304	304	304	304	304	304	304
686.4	349	1.7	50.4	50.4	20	82960	50.4	50.4	378	2.0	4470	2750	713.7	38	723.0	93	304	304	304	304	304	304	304
705.4	847	4.4	75.4	75.4	32	64640	75.4	75.4	876	4.6	2370	2750	713.7	38	723.0	93	304	304	304	304	304	304	304
719.2	1345	7.1	89.1	89.1	40	57290	89.1	89.1	1374	7.1	1670	2750	713.7	38	723.0	93	304	304	304	304	304	304	304
722.5	1485	7.8	92.5	92.5	43	55940	92.5	92.5	1514	8.0	1590	2750	713.7	38	723.0	93	304	304	304	304	304	304	304

DA= 3.57 SQ MI = 2285 AC USGS QUAD-WORUNOCO  
STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.10 IN, PEAK FLOW = 1078 CFS

NOTES - (1) COSTS ARE BASED ON 1974 S.C.S. DESIGN CRITERIA AND COST DATA.  
(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.  
(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE  
(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.  
(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.  
\*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*

# SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-WESTFIELD

SUBWATERSHED MOOSE MEADOW BROOK

BENEFICIAL POOL	:	* EMERGENCY SPILLWAY	*	DESIGN	*	DAM	*	SAFE
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	+	* HIGH WATER	* YIELD
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9
10	10	10	10
11	11	11	11
12	12	12	12
13	13	13	13
14	14	14	14
15	15	15	15
16	16	16	16
17	17	17	17
18	18	18	18
19	19	19	19
20	20	20	20
21	21	21	21
22	22	22	22
23	23	23	23
24	24	24	24
25	25	25	25
26	26	26	26
27	27	27	27
28	28	28	28
29	29	29	29
30	30	30	30
31	31	31	31
32	32	32	32
33	33	33	33
34	34	34	34
35	35	35	35
36	36	36	36
37	37	37	37
38	38	38	38
39	39	39	39
40	40	40	40
41	41	41	41
42	42	42	42
43	43	43	43
44	44	44	44
45	45	45	45
46	46	46	46
47	47	47	47
48	48	48	48
49	49	49	49
50	50	50	50
51	51	51	51
52	52	52	52
53	53	53	53
54	54	54	54
55	55	55	55
56	56	56	56
57	57	57	57
58	58	58	58
59	59	59	59
60	60	60	60
61	61	61	61
62	62	62	62
63	63	63	63
64	64	64	64
65	65	65	65
66	66	66	66
67	67	67	67
68	68	68	68
69	69	69	69
70	70	70	70
71	71	71	71
72	72	72	72
73	73	73	73
74	74	74	74
75	75	75	75
76	76	76	76
77	77	77	77
78	78	78	78
79	79	79	79
80	80	80	80
81	81	81	81
82	82	82	82
83	83	83	83
84	84	84	84
85	85	85	85
86	86	86	86
87	87	87	87
88	88	88	88
89	89	89	89
90	90	90	90
91	91	91	91
92	92	92	92
93	93	93	93
94	94	94	94
95	95	95	95
96	96	96	96
97	97	97	97
98	98	98	98
99	99	99	99
100	100	100	100

ELEV	STORAGE	COST PER	AREA	SURE	COST/	DEPTH	* CREST	STORAGE	COST	*	* TOP	FILL	* PERCENT
		PER				AT	* ELEV	AT CREST	PER	*	* ELEV	VOL	* CHANCE

[illegible][illegible]

SITE NO. 2704  
 STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.10 IN, PEAK FLOW = 1557 CFS  
 DATE: 5-4-75 SW MI 5400 AC LATITUDE 42-13-45 LONGITUDE 72-51-22

Case	Age	Sex	Height	Weight	Temperature	Pulse	Respiration	Blood Pressure	Urine	Feces	Stool	Spinal Fluid	Other
392.7	0	0.0	7	12.7 *	438.5 E	2039	7.0	750 *	440.9	104 *	450.0	70	475 *
393.0	1.00	0.2	12.570	21.2 *	401.0 T	166	0.2	825.0 *	416.7	123	423.7	127	475 *
393.1	1.00	0.2	12.570	21.2 *	401.0 T	166	0.2	825.0 *	416.7	123	423.7	127	475 *

[illegible][illegible]

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SITE-WE-3905  
DA= 0.67 SQ MI = 429 AC USGS QUAD-WORONOCO  
STREAM WATER QUALITY (A) 100-YR PRIN SPWY DESIGN STORM  
SITE RATING (3) RUNOFF = 8.00 IN, PEAK FLOW = 200 CFS  
LATITUDE 42-12-55 LONGITUDE 72-49-07

[illegible]

100	2.8	3750	14	26710	10.1	* 1079.1	105	2.9	3560	* 1084.9	35	* 1088.5	20	51	*	0.20
123	3.4	3010	17	21680	11.6	* 1080.6	129	3.5	2890	* 1085.5	37	* 1088.5	20	51	*	0.21

Year	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
1966	146	4.1	2700	22	17860	12.8	*	1081.8	1	152	4.1	2610	*	1086.5	42	*	1089.5	21	56	*	0.25																																							
1967	164	4.6	2580	25	16910	13.5	*	1082.5	1	169	4.6	2500	*	1086.3	41	*	1089.6	21	56	*	0.27																																							

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SITE-WE-3906

DA= 1.63 SQ MI = 1043 AC	USGS QUAD-WORONOCO	LATITUDE 42-11-51	LONGITUDE 72-48-29
STREAM WATER QUALITY (A)	100-YR PRIN SPWY DESIGN STORM	RUNOFF = 8.00 IN.	PEAK FLOW = 469 CFS
SITE RATING (3)			

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100																																																																																																																																																																																																																																																											
1992	962.4	0	0.0	9	2.4	*	976.4	F	457	5.3	420	*	978.6	55	*	981.8	22	17	*	984.8	22	17	*	987.8	22	17	*	990.8	22	17	*	993.8	22	17	*	996.8	22	17	*	999.8	22	17	*	1002.8	22	17	*	1005.8	22	17	*	1008.8	22	17	*	1011.8	22	17	*	1014.8	22	17	*	1017.8	22	17	*	1020.8	22	17	*	1023.8	22	17	*	1026.8	22	17	*	1029.8	22	17	*	1032.8	22	17	*	1035.8	22	17	*	1038.8	22	17	*	1041.8	22	17	*	1044.8	22	17	*	1047.8	22	17	*	1050.8	22	17	*	1053.8	22	17	*	1056.8	22	17	*	1059.8	22	17	*	1062.8	22	17	*	1065.8	22	17	*	1068.8	22	17	*	1071.8	22	17	*	1074.8	22	17	*	1077.8	22	17	*	1080.8	22	17	*	1083.8	22	17	*	1086.8	22	17	*	1089.8	22	17	*	1092.8	22	17	*	1095.8	22	17	*	1098.8	22	17	*	1101.8	22	17	*	1104.8	22	17	*	1107.8	22	17	*	1110.8	22	17	*	1113.8	22	17	*	1116.8	22	17	*	1119.8	22	17	*	1122.8	22	17	*	1125.8	22	17	*	1128.8	22	17	*	1131.8	22	17	*	1134.8	22	17	*	1137.8	22	17	*	1140.8	22	17	*	1143.8	22	17	*	1146.8	22	17	*	1149.8	22	17	*	1152.8	22	17	*	1155.8	22	17	*	1158.8	22	17	*	1161.8	22	17	*	1164.8	22	17	*	1167.8	22	17	*	1170.8	22	17	*	1173.8	22	17	*	1176.8	22	17	*	1179.8	22	17	*	1182.8	22	17	*	1185.8	22	17	*	1188.8	22	17	*	1191.8	22	17	*	1194.8	22	17	*	1197.8	22	17	*	1200.8	22	17	*	1203.8	22	17	*	1206.8	22	17	*	1209.8	22	17	*	1212.8	22	17	*	1215.8	22	17	*	1218.8	22	17	*	1221.8	22	17	*	1224.8	22	17	*	1227.8	22	17	*	1230.8	22	17	*	1233.8	22	17	*	1236.8	22	17	*	1239.8

[illegible][illegible]

Year	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1991	1489	17.1	380	88	6830	31.9	991.9	1502	17.2	380	99	999.8	40	1.32																																																																																																
1992	1541	17.7	380	87	6660	32.5	992.5	1554	17.9	370	100	1000.4	40	1.34																																																																																																

NOTES - (1) COSTS ARE BASED ON 1974 S.C.S. DESIGN CRITERIA AND COST DATA.

(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.

(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE

CONSIDERED ACCURATE TO THAT DEGREE.  
\*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*



## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

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STUDY AREA-WESTFIELD									
BENEFICIAL POOL									
SUBWATERSHED MOOSE MEADOW BROOK									
EMERGENCY SPILLWAY									
DESIGN HIGH WATER									
DAM									
SAFE YIELD									
AT 95									
PERCENT CHANCE									
FILL VOL (1000 CY)									
HGT (FT)									
TOP ELEV (MSL)									
(AC) (MSL) (AC) (MSL) (AC) (MSL)									
LATITUDE 42-11-24 LONGITUDE 72-48-44									
RUNOFF = 8.00 IN, PEAK FLOW = 601 CFS									
USGS QUAD-WORONOCO									
100-YR PRIN SPWY DESIGN STORM									
COST/ SURF AC (\$)									
DEPTH AT DAM (FT)									
CREST ELEV TYPE (MSL)									
STORAGE AT CREST AC FT									
EMERGENCY SPILLWAY									
DESIGN HIGH WATER									
DAM									
SAFE YIELD									
AT 95									
PERCENT CHANCE									
FILL VOL (1000 CY)									
HGT (FT)									
TOP ELEV (MSL)									
(AC) (MSL) (AC) (MSL) (AC) (MSL)									
LATITUDE 42-11-24 LONGITUDE 72-48-44									
RUNOFF = 8.00 IN, PEAK FLOW = 601 CFS									
USGS QUAD-WORONOCO									
100-YR PRIN SPWY DESIGN STORM									
COST/ SURF AC (\$)									
DEPTH AT DAM (FT)									
CREST ELEV TYPE (MSL)									
STORAGE AT CREST AC FT									
EMERGENCY SPILLWAY									
DESIGN HIGH WATER									
DAM									
SAFE YIELD									
AT 95									
PERCENT CHANCE									
FILL VOL (1000 CY)									
HGT (FT)									
TOP ELEV (MSL)									
(AC) (MSL) (AC) (MSL) (AC) (MSL)									
LATITUDE 42-11-24 LONGITUDE 72-48-44									
RUNOFF = 8.00 IN, PEAK FLOW = 601 CFS									
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COST/ SURF AC (\$)									
DEPTH AT DAM (FT)									

# SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

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STUDY AREA-WESTFIELD										SUBWATERSHED MOOSE MEADOW BROOK									
BENEFICIAL POOL										DESIGN * HIGH WATER * DAM * SAFE									
ELEV	STORAGE	AC FT	PER AC	COST/AC	DEPTH AT	CREST ELEV	STORAGE AT CREST	COST PER AC	USGS QUAD-WORONOCO	EMERGENCY SPILLWAY	DESIGN * HIGH WATER * DAM * SAFE	DESIGN * HIGH WATER * DAM * SAFE	DESIGN * HIGH WATER * DAM * SAFE	DESIGN * HIGH WATER * DAM * SAFE	DESIGN * HIGH WATER * DAM * SAFE	DESIGN * HIGH WATER * DAM * SAFE	DESIGN * HIGH WATER * DAM * SAFE	DESIGN * HIGH WATER * DAM * SAFE	DESIGN * HIGH WATER * DAM * SAFE
(MSL)	AC FT	IN	(\$)	(AC)	(FT)	(MSL)	AC FT	IN	(AC)	EMERGENCY SPILLWAY	DESIGN * HIGH WATER * DAM * SAFE	DESIGN * HIGH WATER * DAM * SAFE	DESIGN * HIGH WATER * DAM * SAFE	DESIGN * HIGH WATER * DAM * SAFE	DESIGN * HIGH WATER * DAM * SAFE	DESIGN * HIGH WATER * DAM * SAFE	DESIGN * HIGH WATER * DAM * SAFE	DESIGN * HIGH WATER * DAM * SAFE	DESIGN * HIGH WATER * DAM * SAFE
DA= 0.70 SQ MI = 448 AC										LATITUDE 42-10-08 LONGITUDE 72-47-23									
STREAM WATER QUALITY (A)										RUNOFF = 8.00 IN, PEAK FLOW = 209 CFS									
SITE RATING (2)	0	0.0	7.6	386.7	E	205	5.5	1590	388.7	32	392.0	32	392.0	32	392.0	32	392.0	32	392.0
367.7	100	2.7	4020	16	24670	22.2	7.0	1540	391.0	39	394.0	34	394.0	34	394.0	34	394.0	34	394.0
382.2	170	4.6	2640	25	18270	25.7	8.3	1450	392.5	45	395.5	36	395.5	36	395.5	36	395.5	36	395.5
385.7	311	8.3	1750	36	15100	30.2	11.3	1300	395.2	55	398.2	38	398.2	38	398.2	38	398.2	38	398.2
390.2	401	10.7	1540	45	13850	32.5	14.1	1170	397.1	62	400.1	40	400.1	40	400.1	40	400.1	40	400.1
392.5																			
DA= 1.07 SQ MI = 685 AC										LATITUDE 42-09-16 LONGITUDE 72-47-39									
STREAM WATER QUALITY (A)										RUNOFF = 8.00 IN, PEAK FLOW = 319 CFS									
SITE RATING (2)	0	0.0	6.6	341.2	E	335	5.9	1580	343.6	31	347.5	37	347.5	37	347.5	37	347.5	37	347.5
316.7	100	1.7	6040	14	43170	20.2	1.9	5560	338.7	23	343.9	34	343.9	34	343.9	34	343.9	34	343.9
330.2	318	5.6	2420	26	29050	31.0	10.7	1260	351.7	44	355.2	45	355.2	45	355.2	45	355.2	45	355.2
341.0	755	13.2	1410	46	23210	43.0	17.2	1080	359.9	57	363.0	53	363.0	53	363.0	53	363.0	53	363.0
353.0	1192	20.9	1170	58	23890	51.4	21.0	1160	366.2	64	369.6	60	369.6	60	369.6	60	369.6	60	369.6
361.4	1261	22.1	1180	60	24940	52.5	22.2	1170	366.6	64	369.6	60	369.6	60	369.6	60	369.6	60	369.6
362.5																			
DA= 6.33 SQ MI = 4051 AC										LATITUDE 42-09-08 LONGITUDE 72-47-45									
STREAM WATER QUALITY (A)										RUNOFF = 8.00 IN, PEAK FLOW = 1323 CFS									
SITE RATING (3)	100	0.3	8210	15	54910	23.2	0.4	5450	236.2	27	240.1	40	240.1	40	240.1	40	240.1	40	240.1
223.2	192	0.6	4860	20	47060	28.5	0.7	3850	241.5	33	245.3	45	245.3	45	245.3	45	245.3	45	245.3
228.6	376	1.1	2690	28	36730	36.4	1.2	2370	245.2	36	249.5	49	249.5	49	249.5	49	249.5	49	249.5
236.3	560	1.7	1970	34	32900	42.3	1.7	1810	247.2	39	250.2	50	250.2	50	250.2	50	250.2	50	250.2
242.2	565	1.7	1970	34	32920	42.5	1.7	1810	247.3	39	250.3	50	250.3	50	250.3	50	250.3	50	250.3
242.5																			

NOTES - (1) COSTS ARE BASED ON 1974 S.C.S. DESIGN CRITERIA AND COST DATA.  
 (2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.  
 (3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE  
 (4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.  
 (5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.  
 \*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*



EXISTING SITE WE-3907 (Westfield Reservoir)

Location: On Moose Meadow Brook about 2,700 feet downstream from Mountain House Road in Montgomery, Massachusetts.

Woronoco, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
918	35	60	1,500	2.34

Potential for Expansion: Please refer to Site Data and Design Summary Table for Potentail Site WE-3907 for details.

Remarks: The dam is an earthfill structure about 300 feet long. The upstream slope is rock riprapped and the downstream slope is vegetated. A gatehouse at the downstream toe outlets through a 3 foot x 3 foot concrete box culvert. The emergency spillway, on the left abutment, is a 20 feet wide concrete lined channel with provisions for 1 foot of stoplogs.

Ownership and Use: The reservoir is owned by the city of Westfield and is used for water supply.

\*\*\*\*\*

EXISTING SITE WE-3915 (Crescent Mills Dam)

Location: On the Westfield River about 400 feet downstream from the Roaring Brook - Westfield River confluence in Montgomery, Massachusetts.

Woronoco, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
320	(Westfield R.)	25	210,350	328.67

Potential for Expansion: Topography limits any significant increase in surface area.

Remarks: The dam is a rock masonry structure of sinuous shape, about 400 feet long. The structure was built on bedrock. The entire dam has provisions for 3 feet of flashboards. A gatehouse is located on the right abutment.

Ownership and Use: The dam is owned by Crescent Mills Paper Co. with the water being used for paper processing.

\*\*\*\*\*

EXISTING SITE WE-3916 (Westfield River Paper  
Co., Inc., Dam)

Location: On the Westfield River about 500 feet downstream from the Bradley Brook-Westfield River confluence in Russell, Massachusetts.

Woronoco, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
265	(Westfield R.)	25	211,950	331.17

Potential for Expansion: Topography limits any significant increase in surface area.

Remarks: The dam is an irregular shaped concrete gravity structure. The right section of the dam has provisions for 3 feet of flashboards. A gatehouse is located on the left abutment.

Ownership and Use: The dam is owned by the Westfield River Paper Co. Inc., with the water being used for paper processing.

\*\*\*\*\*

EXISTING SITE WE-3917 (Strathmore Paper Co. Dam)

Location: On the Westfield River about 400 feet downstream from the Potash Brook-Westfield River confluence in Russell, Massachusetts.

Woronoco, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
220	(Westfield R.)	35	215,200	336.25

Potential for Expansion: Topography limits any significant increase in surface area.

Remarks: The dam is a 300-foot long concrete gravity dam constructed on bedrock with gate control on the right abutment.

Ownership and Use: The dam is owned by the Strathmore Paper Co., with the water being used for paper processing.

\*\*\*\*\*



EXISTING SITE WE-3918 (Tekoa Reservoir)

Location: On Moose Meadow Brook about 2,000 feet upstream from the Massachusetts Turnpike (Interstate Route 90) in Montgomery, Massachusetts.

Woronoco, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>Area (Sq. Mi)</u>
435	5	20	2,750	4.30

Potential for Expansion: Topography limits any significant increase in surface area and storage volume.

Remarks: The dam is a stone masonry structure about 200 feet long. The spillway is a 30-foot long stone masonry weir having a 2-foot long notch. The weir has a maximum head of 3 feet. A gatehouse controls water through a 12-inch steel pipe on the left abutment.

Ownership and Use: The reservoir is owned by the city of Westfield and is used for water supply.

\*\*\*\*\*



WE-3907  
Westfield Reservoir



WE-3917  
Strathmore Paper Co. Dam



WE-3915  
Crescent Mills Dam



WE-3918  
Tekoa Reservoir



WE-3916  
Westfield River Paper Co., Inc. Dam

EXISTING RESERVOIRS  
SUBWATERSHED WE-39  
MOOSE MEADOW BROOK



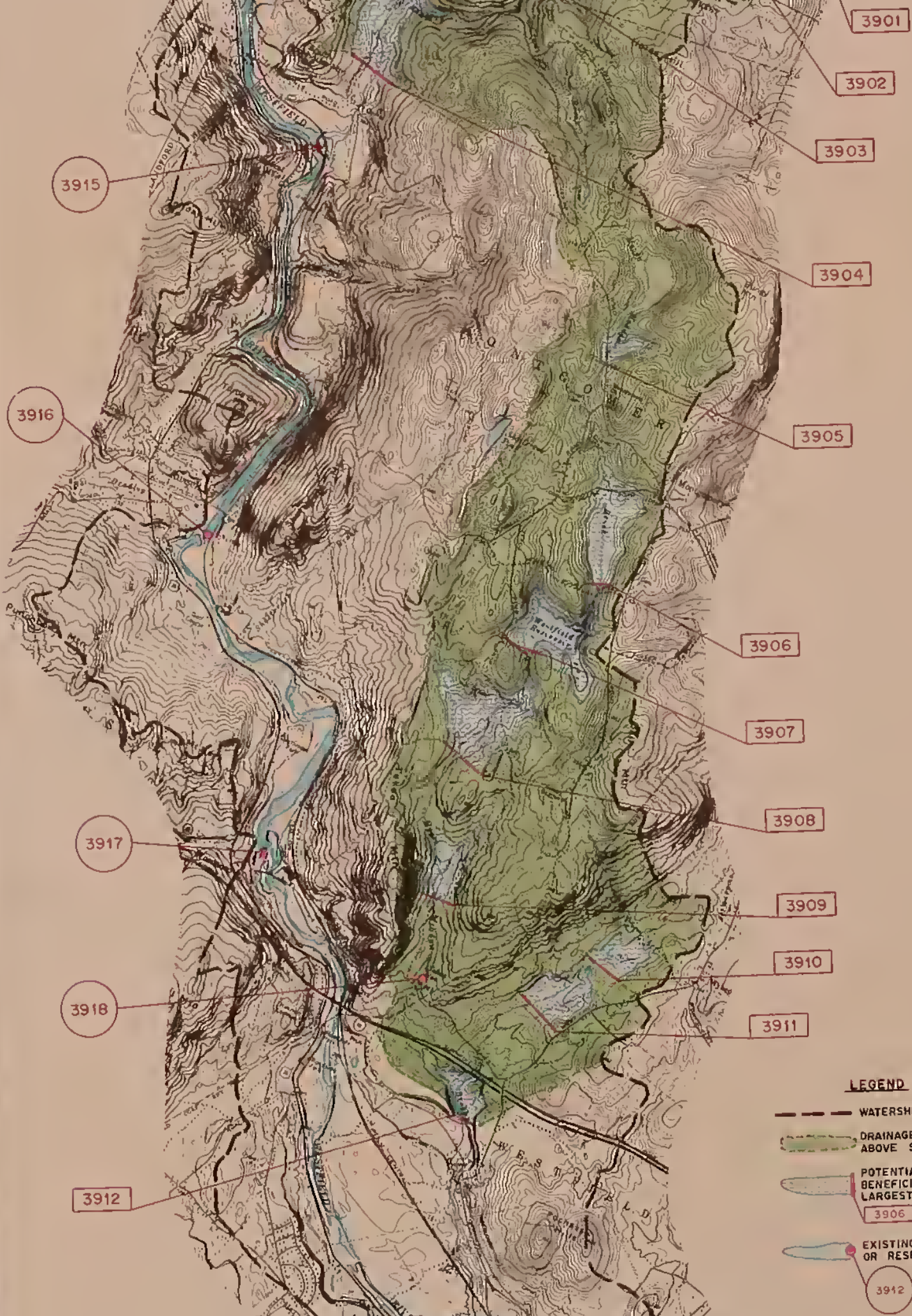








Source—U.S.G.S. Quad Sheets  
Blondford, Mass.—1972  
Chesler, Mass.—1972  
Mt. Tom, Mass.—1972  
Southwick, Mass.—1972  
Westhampton, Mass.—1972  
West Springfield, Mass.—1970  
Worcester, Mass.—1967



MODSE MEADOW BROOK (WE-39)  
WESTFIELD STUDY AREA  
MASSACHUSETTS  
EXISTING AND POTENTIAL RESERVOIR SITES  
UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE





WESTFIELD STUDY AREA  
SITE DATA FOR

## Subwatershed WE-40, Bradley Brook

The Bradley Brook subwatershed covers about 7,000 acres in Blandford and Russell in Hampden County.

The major stream in the subwatershed is Bradley Brook which forms in Russell at the confluence of Black and Freeland Brooks and flows easterly to the Westfield River.

A Work Plan for Watershed Protection and Flood Prevention has been developed for Bradley Brook under authority of Public Law-566 (83rd Congress). The project includes a multiple-purpose water supply and flood control dam which has been constructed on Black Brook and a single purpose floodwater retarding structure planned for Freeland Brook. Because of serious geologic problems in the Freeland Brook valley, it may be necessary to delete the Freeland site from the plan. Studies are now underway to assess the effects of such an action.

Elevations in the subwatershed range from a high of about 1,550 feet in Blandford to a low of about 300 feet in Russell.

Two potential reservoir sites and two existing reservoirs were studied.

POTENTIAL SITE WE-4001

Location: On an unnamed tributary to Black Brook about 900 feet upstream from Huntington Road in Blandford, Mass.

Blandford, Mass. USGS quadrangle

Latitude:  $42^{\circ}13'00''$  Longitude:  $72^{\circ}54'22''$

Facilities Affected: None below elevation 1097

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till); shallow to bedrock. Rock outcrops on the left abutment may be bedrock. Depth to schist bedrock in the foundation is estimated to be 10 to 15 feet. Water-holding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*



POTENTIAL SITE WE-4003

Location: On Wigwam Brook about 850 feet upstream from its confluence with Stage Brook in Blandford, Mass.

Blandford, Mass. USGS quadrangle

Latitude:  $42^{\circ}10'57''$  Longitude:  $72^{\circ}52'56''$

Facilities Affected: None below elevation 686

Geologic Conditions: Both abutments are silty sand, gravel, cobbles and boulders (glacial till) with a gravel boulder terrace at the toe of the left abutment. Schist bedrock outcrops in the brook. Waterholding capabilities appear to be good. Some seepage is expected through the left abutment. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

# SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-WESTFIELD									
SUBWATERSHED BRADLEY BROOK									
BENEFICIAL POOL									
ELEV	STORAGE	PER AC FT	AREA (AC)	COST/ SURF AC (\$)	DEPTH AT DAM (FT)	CREST ELEV (MSL)	STORAGE AT CREST AC FT	COST PER AC FT (\$)	DESIGN HIGH WATER
(MSL)	AC FT	IN				++ TYPE			
1051.6	0	0.0	2	3190	20.7	1070.9 E	171 5.1	1450	1073.4
1066.6	100	3.0	13	24190	20.7	1075.1 E	252 7.6	1260	1077.5
1073.9	221	6.6	20	19560	27.9	1080.4 E	376 11.3	1050	1082.6
1083.8	463	14.0	29	17960	37.8	1088.3 E	606 18.2	850	1090.5
1091.3	706	21.2	35	18090	45.3	1093.8 E	801 24.2	790	1096.1
1092.5	747	22.6	36	18330	46.5	1095.0 E	845 25.6	790	1097.3
DA= 0.62 SQ MI = 397 AC USGS QUAD-BLANDFORD									
LATITUDE 42-13-00 LONGITUDE 72-54-22									
RUNOFF = 8.10 IN, PEAK FLOW = 187 CFS									
* * * * *									
SITE-WE-4001	SITE RATING	(1)	STREAM WATER QUALITY (A)	100-YR PRIN SPWY DESIGN STORM	USGS QUAD-BLANDFORD	100-YR PRIN SPWY DESIGN STORM	USGS QUAD-BLANDFORD	100-YR PRIN SPWY DESIGN STORM	USGS QUAD-BLANDFORD
1051.6	0	0.0	5.6	1070.9 E	171 5.1	1450	1073.4	20	1076.9
1066.6	100	3.0	20.7	1075.1 E	252 7.6	1260	1077.5	23	1080.6
1073.9	221	6.6	27.9	1080.4 E	376 11.3	1050	1082.6	28	1085.8
1083.8	463	14.0	37.8	1088.3 E	606 18.2	850	1090.5	34	1093.5
1091.3	706	21.2	45.3	1093.8 E	801 24.2	790	1096.1	40	1099.1
1092.5	747	22.6	46.5	1095.0 E	845 25.6	790	1097.3	41	1100.3
* * * * *									
SITE-WE-4003	SITE RATING	(1)	STREAM WATER QUALITY (A)	100-YR PRIN SPWY DESIGN STORM	USGS QUAD-BLANDFORD	100-YR PRIN SPWY DESIGN STORM	USGS QUAD-BLANDFORD	100-YR PRIN SPWY DESIGN STORM	USGS QUAD-BLANDFORD
630.9	0	0.0	10.8	661.2 E	282 6.8	1440	663.0	24	667.3
650.0	100	2.4	30.0	650.0 T	106 2.5	4890	657.8	17	661.0
660.4	257	6.1	40.4	668.9 E	481 11.6	1220	671.3	35	674.7
671.7	570	13.7	51.6	676.2 E	746 17.9	990	678.7	44	681.7
682.5	1024	24.6	62.5	682.5 T	1031 24.7	1070	686.0	54	689.0
* * * * *									
LATITUDE 42-10-57 LONGITUDE 72-52-56									
RUNOFF = 8.10 IN, PEAK FLOW = 235 CFS									
* * * * *									
630.9	0	0.0	10.8	661.2 E	282 6.8	1440	663.0	24	667.3
650.0	100	2.4	30.0	650.0 T	106 2.5	4890	657.8	17	661.0
660.4	257	6.1	40.4	668.9 E	481 11.6	1220	671.3	35	674.7
671.7	570	13.7	51.6	676.2 E	746 17.9	990	678.7	44	681.7
682.5	1024	24.6	62.5	682.5 T	1031 24.7	1070	686.0	54	689.0
* * * * *									
LATITUDE 42-10-57 LONGITUDE 72-52-56									
RUNOFF = 8.10 IN, PEAK FLOW = 235 CFS									
* * * * *									

NOTES - (1) COSTS ARE BASED ON 1974 S.C.S. DESIGN CRITERIA AND COST DATA.  
 (2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.  
 (3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE  
 (4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.  
 (5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

\*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*



EXISTING SITE WE-4005 (Black Brook Reservoir)

Location: On Black Brook about 5,500 feet downstream from Huntington Road in Blandford, Massachusetts.

Blandford, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
864	10	56	1,500	2.34

Potential for Expansion: This is a newly completed dam. Raising the present pool level by 20 feet would nearly triple the surface area.

Remarks: The dam is an earthfill structure about 1,300 feet long with an 18-foot top width. Both slopes of the dam are riprapped. The principal spillway is a 36-inch diameter concrete conduit with a concrete riser inlet. The vegetated emergency spillway is 50 feet wide. The total flood-water storage is 864 acre-feet.

Ownership and Use: The site is owned by the town of Russell and is used for flood protection and water supply. The dam was built as part of the Bradley Brook PL-566 Watershed Project.

\*\*\*\*\*

EXISTING SITE WE-4006 (Russell Reservoir)

Location: On Black Brook about 4,100 feet upstream from its confluence with Bradley Brook in Russell, Massachusetts.

Woronoco, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
620	2	30	1,950	3.05

Potential for Expansion: Topography limits any significant increase in surface area and storage volume.

Remarks: The dam is a concrete structure about 100 feet long. The spillway is a 50-foot long weir having a maximum head of 1 foot.

Ownership and Use: The reservoir is owned by the town of Russell and is used for water supply.

\*\*\*\*\*

WE-4005  
Black Brook Reservoir



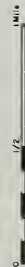
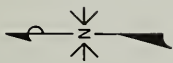
WE-4006  
Russell Reservoir

EXISTING RESERVOIRS  
SUBWATERSHED WE-40  
BRADLEY BROOK









- LEGEND**
- WATERSHED BOUNDARY
  - DRAINAGE AREA ABOVE STRUCTURE
  - POTENTIAL SITE SHOWING BENEFICIAL POOL FOR LARGEST STRUCTURE
  - EXISTING POND OR RESERVOIR



**BRADLEY BROOK (WE-40)**  
**WESTFIELD STUDY AREA**  
 MASSACHUSETTS  
 EXISTING AND POTENTIAL RESERVOIR SITES  
 UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE

Source - U.S.G.S. Quad Sheets  
 Blanford, Mass. - 1955  
 Woronoco, Mass. - 1967





WESTFIELD STUDY AREA  
SITE DATA FOR

Subwatershed WE-41, Russell Brook

The Russell Brook subwatershed covers about 4,300 acres in Blandford and Russell in Hampden County.

The major streams in the subwatershed include Russell Pond Brook and Potash Brook which combine in Russell and flow to the Westfield River.

Elevations in the subwatershed range from a high of about 1,450 feet in Blandford to a low of about 250 feet in the Woronoco section of Russell.

One existing reservoir was studied.

EXISTING SITE WE-4101 (Russell Pond)

Location: On Pond Brook at General Knox Road in Russell, Massachusetts.

Woronoco, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
848	80	10	850	1.33

Potential for Expansion: The size of the existing reservoir surface area in relation to the drainage area limits expansion potential.

Remarks: The dam is an earthfill structure about 200 feet long. The spillway system consists of a 30-foot long concrete weir having 1 foot of stoplogs. The spillway outlets through a 48-inch concrete culvert beneath General Knox Road. A vegetated emergency spillway is located to the left of the weir.

Ownership and Use: The pond is an enlarged Great Pond used for recreation. The dam is owned by the town of Russell.

\*\*\*\*\*





EXISTING SITE WE-4101  
(Russell Pond)

WESTFIELD STUDY AREA  
SITE DATA FOR

Subwatershed WE-41, Russell Brook

The Russell Brook subwatershed covers about 4,300 acres in Blandford and Russell in Hampden County.

The major streams in the subwatershed include Russell Pond Brook and Potash Brook which combine in Russell and flow to the Westfield River.

Elevations in the subwatershed range from a high of about 1,450 feet in Blandford to a low of about 250 feet in the Woronoco section of Russell.

One existing reservoir was studied.

EXISTING SITE WE-4101 (Russell Pond)

Location: On Pond Brook at General Knox Road in Russell, Massachusetts.

Woronoco, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>Drainage Area (Sq. Mi.)</u>
848	80	10	850	1.33

Potential for Expansion: The size of the existing reservoir surface area in relation to the drainage area limits expansion potential.

Remarks: The dam is an earthfill structure about 200 feet long. The spillway system consists of a 30-foot long concrete weir having 1 foot of stoplogs. The spillway outlets through a 48-inch concrete culvert beneath General Knox Road. A vegetated emergency spillway is located to the left of the weir.

Ownership and Use: The pond is an enlarged Great Pond used for recreation. The dam is owned by the town of Russell.

\*\*\*\*\*



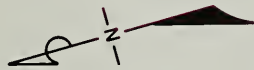


EXISTING SITE WE-4101  
(Russell Pond)





LOCATION MAP




4101



LEGEND

--- WATERSHED BOUNDARY

 EXISTING POND OR RESERVOIR

4101



# RUSSELL BROOK (WE-41) WESTFIELD STUDY AREA

MASSACHUSETTS

EXISTING AND POTENTIAL RESERVOIR SITES  
UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

Source - U.S.G.S. Quad Sheets  
Blandford, Mass. - 1972  
Woronoco, Mass. - 1967





WESTFIELD STUDY AREA  
SITE DATA FOR

## Subwatershed WE-42, Cobble Mountain Reservoir

The Cobble Mountain Reservoir subwatershed covers about 39,800 acres in Becket and Otis in Berkshire County; and Blandford, Granville, Russell, Southwick, Tolland, and Westfield in Hampden County.

The subwatershed is composed of many small streams which flow into the Cobble Mountain Reservoir in Blandford. The Little River leaves Cobble Mountain and flows easterly to its confluence with the Westfield River in Westfield.

Elevations in the subwatershed range from a high of about 1,750 feet in Otis to a low of about 100 feet in Westfield.

Fifteen potential reservoir sites and six existing reservoirs were studied.

POTENTIAL SITE WE-4201

Location: On an unnamed tributary to Beaver Pond about 4,300 feet downstream from the Otis-Blandford town line in Blandford, Mass.

Blandford, Mass. USGS quadrangle

Latitude: 42°13'38" Longitude: 72°59'41"

Facilities Affected: None below elevation 1417

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). Depth to schist bedrock in the foundation is estimated to be 5 to 10 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*



POTENTIAL SITE WE-4202

Location: On an unnamed tributary to Wheeler Brook about 1,500 feet upstream from North Blandford Road in Blandford, Mass.

Blandford, Mass. USGS quadrangle

Latitude:  $42^{\circ}12'52''$  Longitude:  $72^{\circ}59'01''$

Facilities Affected: None below elevation 1307

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till) with outcrops of schist bedrock in the right abutment. Bedrock outcrops in the brook. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE WE-4203

Location: On Tiffany Brook about 2,300 feet upstream from Gore Road in Blandford, Mass.

Blandford, Mass. USGS quadrangle

Latitude:  $42^{\circ}12'17''$  Longitude:  $72^{\circ}57'22''$

Facilities Affected: None below elevation 1377

Geologic Conditions: Both abutments are silty sand with gravel, cobbles and boulders (glacial till). Depth to schist bedrock in the foundation is estimated to be 5 to 10 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

Public Ownership: The east end of the dam and nearly all of the reservoir would be within the Blandford State Forest.

\*\*\*\*\*

POTENTIAL SITE WE-4204

Location: On Bedlam Brook about 1,600 feet downstream from the confluence with Tiffany Brook in Blandford, Mass.

Blandford, Mass. USGS quadrangle

Latitude: 42°11'28" Longitude: 72°57'05"

Facilities	Facility	Elevation
Affected:	Blandford Road and utilities	1175

Geologic Conditions: The left abutment is silty sand with gravel, cobbles, and boulders (glacial till). The right abutment is outwash sand and gravel at the toe of the slope and glacial till at higher elevations. Estimated depth to schist bedrock in the foundation is 20 to 30 feet. Waterholding capabilities appear to be fair. Seepage is expected through the right abutment and foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE WE-4205

Location: On Watson Brook about 3,850 feet downstream from Gibbs Road in Blandford, Mass.

Blandford, Mass. USGS quadrangle

Latitude: 42°10'54" Longitude: 73°00'05"

Facilities	None below elevation 1507
Affected:	

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). Depth to gneiss bedrock in the foundation is estimated to be 5 to 10 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The emergency spillway should be located on the abutment requiring least rock excavation.

\*\*\*\*\*



POTENTIAL SITE WE-4206

Location: On Pond Brook at Route 23 in Blandford, Mass.

Blandford, Mass. USGS quadrangle

Latitude:  $42^{\circ}10'23''$  Longitude:  $72^{\circ}58'34''$

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Otis Stage Road and utilities	1212

Geologic Conditions: Both abutments are silty sand, gravel, and boulders (glacial till). Estimated depth to schist bedrock in the foundation is 20 to 30 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location. Refer to Existing Site WE-4206 (Blair Pond) for data on the existing dam and reservoir at this site.

Public Ownership: The site is owned by the city of Springfield.

\*\*\*\*\*

POTENTIAL SITE WE-4207

Location: On Peeble Brook about 1,800 feet upstream from Stage Road (Route 23) in Blandford, Mass.

Blandford, Mass. USGS quadrangle

Latitude:  $42^{\circ}10'45''$  Longitude:  $72^{\circ}57'19''$

Facilities	None below elevation 1097
Affected:	

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till) but may be shallow to bedrock. Depth to schist bedrock in the foundation is estimated to be 10 to 15 feet. Waterholding capabilities appear to be fair. Seepage is expected in the foundation and at toe of both abutments. Borrow material for dam construction was located near the site.

Engineering Notes: The emergency spillway should be located on the abutment requiring the least rock excavation.

\*\*\*\*\*

POTENTIAL SITE WE-4208

Location: On Bedlam Brook about 625 feet upstream from State Route 23 in Blandford, Mass.

Blandford, Mass. USGS quadrangle

Latitude:  $42^{\circ}10'45''$  Longitude:  $72^{\circ}56'50''$

Facilities Affected: None below elevation 1167

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till) at higher elevations, with cobbles and boulders and sand and gravel (terrace deposits) at the toe of the abutments. Depth to schist bedrock in the foundation is estimated to be 10 to 20 feet. Waterholding capabilities appear to be fair. Seepage is expected at the toe of both abutments and the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE WE-4209

Location: On Lloyd Brook about 1,650 feet downstream from Shepard Road in Blandford, Mass.

Blandford, Mass. USGS quadrangle

Latitude:  $42^{\circ}09'28''$  Longitude:  $72^{\circ}59'28''$

Facilities Affected:	<u>Facility</u> Shepard Road	<u>Elevation</u> 1325
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Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till) with a narrow terrace of gravel and sand at the toe of the left abutment. Depth to schist bedrock in the foundation is estimated to be 5 to 10 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*



POTENTIAL SITE WE-4210

Location: On Case Brook about 1,350 feet downstream from the confluence with Lloyd Brook in Blandford, Mass.

Blandford, Mass. USGS quadrangle

Latitude:  $42^{\circ}09'47''$  Longitude:  $72^{\circ}58'53''$

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	South Otis Road	1235

Geologic Conditions: Both abutments are thin discontinuous deposits of silty sand, gravel, cobbles, and boulders with many outcrops of schist bedrock. Schist bedrock outcrops in the brook. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

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POTENTIAL SITE WE-4211

Location: On Case Brook about 150 feet upstream from South Otis Road in Blandford, Mass.

Blandford, Mass. USGS quadrangle

Latitude:  $42^{\circ}08'52''$  Longitude:  $72^{\circ}58'50''$

Facilities	None below elevation 1267
Affected:	

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders. Depth to schist bedrock in the foundation is estimated to be 20 to 30 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE WE-4212

Location: On Falls Brook about 3,000 feet upstream from Cobble Mountain Reservoir in Blandford, Mass.

Blandford, Mass. USGS quadrangle

Latitude: 42°09'44" Longitude: 72°55'24"

Facilities Affected: None below elevation 1177

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). There is a gravel terrace at the toe of both abutments. Waterholding capabilities appear to be fair. Seepage is expected through the gravel terraces. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE WE-4214

Location: On Birch Meadow Brook about 400 feet upstream from Crooks Road in Blandford, Mass.

Blandford, Mass. USGS quadrangle

Latitude: 42°09'13" Longitude: 72°54'06"

Facilities Affected:	<u>Facility</u> Cobble Mountain Road and utilities	<u>Elevation</u> 1055
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Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till) with outwash sand and gravel at the toe. Depth to schist bedrock in the foundation is estimated to be 15 to 20 feet. Waterholding capabilities appear to be good. Seepage is expected at the toe of both abutments. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

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POTENTIAL SITE WE-4215

Location: On Borden Brook about 100 feet upstream from Beech Hill Road in Granville, Mass.

West Granville, Mass. USGS quadrangle

Latitude: 42°07'26" Longitude: 72°57'09"

Facilities Affected: None below elevation 1140

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till); shallow to schist bedrock with a small sand and gravel terrace at the toe of both abutments. Depth to schist bedrock in the foundation is estimated to be 10 to 15 feet. Waterholding capabilities appear to be good. Seepage is expected at the toe of both abutments. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

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POTENTIAL SITE WE-4216

Location: On Jacks Brook about 2,000 feet downstream from the Southwick-Westfield boundary in Westfield, Mass.

Southwick, Mass. USGS quadrangle

Latitude: 42°06'00" Longitude: 72°47'42"

Facilities Affected: None below elevation 337

Geologic Conditions: Both abutments are poorly graded sand and gravel (glacial outwash). Depth to conglomerate and shale bedrock in the foundation is estimated to be 30 to 40 feet. Waterholding capabilities appear to be poor. Seepage is expected through both abutments and the foundation. Previous borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

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## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

96

STUDY AREA-WESTFIELD									
BENEFICIAL POOL									
SUBWATERSHED COBBLE MOUNTAIN RESERVOIR									
ELEV	STORAGE	COST PER AC FT	AREA (AC)	COST/ SURF AC (\$)	DEPTH AT DAM (FT)	CREST ELEV * (MSL)	STORAGE AT CREST AC FT	DESIGN HIGH WATER * (MSL)	SAFE YIELD * (MGD)
(MSL)	AC FT	(\$)		(\$)					
DA= 2.10 SQ MI = 1344 AC									
STREAM WATER QUALITY (A)									
USGS QUAD-BLANDFORD									
100-YR PRIN SPWY DESIGN STORM									
LATITUDE 42-11-28 LONGITUDE 72-57-05									
RUNOFF = 8.10 IN, PEAK FLOW = 634 CFS									
* * * * *									
SITE-WE-4204	SITE RATING (2)	0	0.0	3	10.5	1195.3 E	769 6.8	690	106
1160.5				6870	22.7	1172.6 T	117 1.0	5880	72
1172.6	100	0.8		49070	40.4	1190.4 T	567 5.1	1630	121
1190.4	550	4.9		25980	58.9	1219.4 E	2165 19.2	530	298
1208.9	1450	12.8		18650	78.0	1234.5 E	3367 30.0	480	466
1228.0	2800	25.0		20060					
* * * * *									
DA= 1.50 SQ MI = 960 AC									
STREAM WATER QUALITY (A)									
USGS QUAD-OTIS									
100-YR PRIN SPWY DESIGN STORM									
LATITUDE 42-10-54 LONGITUDE 73-00-05									
RUNOFF = 8.10 IN, PEAK FLOW = 453 CFS									
* * * * *									
SITE-WE-4205	SITE RATING (1)	0	0.0	3	13.7	1489.1 E	503 6.3	760	61
1463.8				3990	26.7	1489.1 E	503 6.3	790	54
1476.6	100	1.2		24050	35.5	1494.1 E	772 9.7	680	77
1485.6	337	4.1		13670	45.0	1501.5 E	1262 15.7	570	126
1495.0	811	10.1		890	51.9	1501.9 T	1296 16.2	750	141
1501.9	1284	16.1		760	52.5	1502.5 T	1339 16.7	740	149
1502.5	1327	16.6		740					
* * * * *									
DA= 3.50 SQ MI = 2240 AC									
STREAM WATER QUALITY (A)									
USGS QUAD-BLANDFORD									
100-YR PRIN SPWY DESIGN STORM									
LATITUDE 42-10-23 LONGITUDE 72-58-34									
RUNOFF = 8.00 IN, PEAK FLOW = 1044 CFS									
* * * * *									
SITE-WE-4206	SITE RATING (1)	0	0.0	25	1.5	1203.6 E	1073 5.6	350	21
1193.5				4490	3.8	1204.3 E	1171 6.3	380	23
1195.8	100	0.5		6990	8.6	1207.1 E	1634 8.8	360	33
1200.6	602	3.2		980	15.1	1211.6 E	2449 13.1	280	51
1207.1	1606	8.6		430	20.5	1212.5 T	2623 14.1	370	73
1212.5	2595	13.8		370					
* * * * *									

NOTES - (1) COSTS ARE BASED ON 1974 S.C.S. DESIGN CRITERIA AND COST DATA.

(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.

(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

\*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*





## STUDY AREA-WESTFIELD

## SUBWATERSHED COBBLE MOUNTAIN RESERVOIR

# EMERGENCY SPILLWAY

# DESIGN

## DAM

**\* SAFE**

**\* SAFE**

[illegible][illegible]

SITE-WE-4212	SITE RATING	DA= 0.74 SQ MI =	474 AC	USGS QUAD-BLANDFORD	100-YR PRIN SPWY DESIGN	STORM	RUNOFF =	8.00 IN,	PEAK FLOW =	LATITUDE 42-09-44	LONGITUDE 72-55-44	
		STREAM WATER QUALITY (A)										
11134.9	0	0.0	4.9	1153.0	E	206	5.1	940	1155.1	25	1158.6	29
11147.9	100	2.5	17.9	1156.4	E	286	7.3	880	1158.6	28	1161.9	32
11154.9	244	6.1	24.9	1161.4	E	430	10.8	730	1163.6	34	1166.6	37
11164.6	532	13.5	34.7	1169.1	E	710	18.0	590	1171.5	44	1174.5	44
11171.8	820	20.7	41.8	1174.3	E	939	23.7	550	1176.6	50	1179.6	50
11172.5	849	21.5	42.5	1175.0	E	970	24.6	550	1177.3	50	1180.3	50

NOTES - (1) COSTS ARE BASED ON 1974 S.C.S. DESIGN CRITERIA AND COST DATA.

- (2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.
- (3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE
- (4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.
- (5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION.



## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-WESTFIELD RIVER										SUBWATERSHED COBBLE MOUNTAIN RESERVOIR																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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ELEV	STORAGE	COST PER AC FT	AREA (AC)	COST SURF AC (\$)	DEPTH AT DAM (FT)	CREST ELEV	STORAGE AT CREST	COST PER AC FT	TOP ELEV	HGT	FILL VOL (1000 CY)	PERCENT CHANCE	AT 95	SAFE	YIELD																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
(MSL)	AC FT	IN	(AC)	(AC)	(FT)	+	TYPE	(MSL)	AC FT	IN	(MSL)	(AC)	(MSL)	FT	(MGD)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
DA= 0.83 SQ MI = 531 AC										USGS QUAD-BLANDFORD																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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SITING RATING (1)										RUNOFF = 8.00 IN, PEAK FLOW = 247 CFS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
1048.4	0	0.0	2	2790	17.2	8.3	1060.0	E	184	4.1	1130	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	1062.4	42	1065.4	25	23	10

NOTES - (1) COSTS ARE BASED ON 1974 S.C.S. DESIGN CRITERIA AND COST DATA.

(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.

(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

\*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*



EXISTING SITE WE-4206 (Blair Pond)

Location: On Pond Brook at Otis Stage Road (State Route 23) in Blandford, Massachusetts.

Blandford, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
1,195	70	10	1,350	2.11

Potential for Expansion: Please refer to Site Data and Design Summary Table for Potential Site WE-4206 for details.

Remarks: The dam is formed by the Otis Stage Road highway embankment. The spillway is an 8-foot wide stone channel outletting into a 6' x 6' concrete box culvert beneath the road.

Ownership and Use: The pond is owned by the city of Springfield and is used for water supply.

\*\*\*\*\*

EXISTING SITE WE-4220 (Long Pond)

Location: On Wheeler Brook about 3,000 feet upstream from North Blandford Road in Blandford, Massachusetts.

Otis, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
1,544	85	8	500	0.78

Potential for Expansion: Topography limits any significant increase in surface area. The size of the existing reservoir surface area in relation to the drainage area limits expansion potential.

Remarks: The dam is an earthfill structure about 250 feet long with a vertical stone masonry wall on the downstream face. The spillway is a 20-foot long stone masonry weir having a maximum head of 1 foot and a total fall of 5 feet.

Ownership and Use: The pond is owned by the town of Blandford and is used for water supply.

\*\*\*\*\*

EXISTING SITE WE-4221 (Borden Brook Reservoir)

Location: On Borden Brook about 4,000 feet downstream from Beech Hill Road in Blandford and Granville, Massachusetts.

Blandford, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
1,071	205	50	4,950	7.73

Potential for Expansion: Topography limits any increase in surface area. The reservoir is upstream from Cobble Mountain Reservoir, another water supply for the city of Springfield. Any additional storage in Borden Brook Reservoir would probably result in less yield being available for the Cobble Mountain Reservoir.

Remarks: The dam is an earthfill structure about 400 feet long with rock riprap on the upstream slope and a vegetated downstream slope. The pond level is regulated by a gatehouse in the center of the dam. The spillway, located on the right abutment is a 50-foot wide concrete ogee spillway with 1 foot of flashboards.

Ownership and Use: The reservoir is owned by the city of Springfield and is used for water supply.

\*\*\*\*\*

EXISTING SITE WE-4222 (Cobble Mountain Reservoir)

Location: On the Little River at Cobble Mountain Road in Russell, Massachusetts.

Blandford, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
952	1,135	243	31,050	48.52

Potential for Expansion: Raising the height of the 243-foot dam to provide additional storage would be expensive.

Remarks: The dam is a 1.8 million cubic yard hydraulic fill structure about 1,500 feet long having a top width of 50 feet. The emergency spillway is a concrete weir structure, 135 feet wide. The total capacity of the reservoir is 22,829 billion gallons.

Ownership and Use: The reservoir is owned by the city of Springfield and is used for water supply.

\*\*\*\*\*



EXISTING SITE WE-4223 (Stevens Paper Co. Dam-Upper)

Location: On the Little River about 300 feet downstream from Granville Road in Westfield, Massachusetts.

Southwick, Mass.-Conn. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
192	20	15	50,250	78.52

Potential for Expansion: Raising the present pond level by 10 feet would create a 250-acre surface area. The enlarged pond would be less than 10 feet deep over most of its area. Three streets and about 20 houses would be affected.

Remarks: The dam is a 150 foot long concrete weir having a maximum head of 10 feet. The right abutment is wooded and the left abutment is a stone wall. There is a gated outlet on the left abutment.

Ownership and Use: The dam is owned by Stevens Paper Mill Inc. and is used for industrial purposes.

\*\*\*\*\*

EXISTING SITE WE-4224 (Crane Pond)

Location: On the Little River about 500 feet upstream from U.S. Route 202 in Westfield, Massachusetts.

Southwick, Mass.-Conn. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
165	40	15	52,650	82.27

Potential for Expansion: The drainage area already exceeds the maximum criteria of 50 square miles. Raising the present pond level by 15 feet would create a 175-acre surface area. Two streets and about 10 houses would be affected.

Remarks: The dam is a 100-foot long concrete weir with provisions for 3 feet of flashboards. The right abutment is wooded and the left abutment is a stone wall. There is a gated outlet on the left abutment.

Ownership and Use: The dam is owned by Stevens Paper Mills Inc. and is used for industrial purposes.

\*\*\*\*\*

WE-4206  
Blair Pond



WE-4221  
Borden Brook Reservoir



WE-4220  
Long Pond

EXISTING RESERVOIRS  
SUBWATERSHED WE-42  
COBBLE MOUNTAIN RESERVOIR







WE-4222  
Cobble Mountain Reservoir



WE-4224  
Crane Pond



WE-4223  
Stevens Paper Co. Dam-Upper

EXISTING RESERVOIRS  
SUBWATERSHED WE-42  
COBBLE MOUNTAIN RESERVOIR

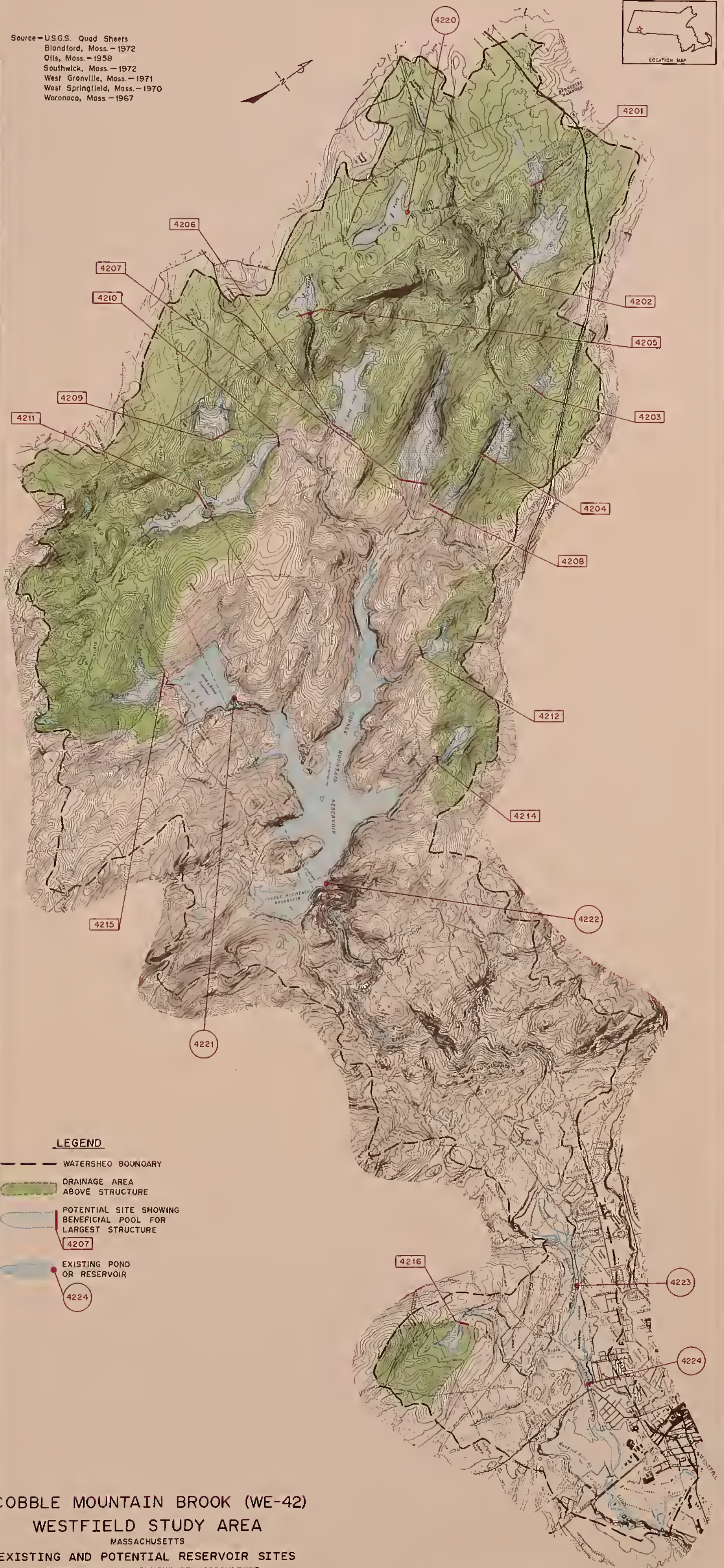








Source—U.S.G.S. Quad Sheets  
 Blondford, Mass.—1972  
 Otis, Mass.—1958  
 Southwick, Mass.—1972  
 West Granville, Mass.—1971  
 West Springfield, Mass.—1970  
 Woronoco, Mass.—1967



# LEGEND

- WATERSHED BOUNDARY
- DRAINAGE AREA ABOVE STRUCTURE
- POTENTIAL SITE SHOWING BENEFICIAL POOL FOR LARGEST STRUCTURE
- EXISTING POND OR RESERVOIR

COBBLE MOUNTAIN BROOK (WE-42)  
 WESTFIELD STUDY AREA  
 MASSACHUSETTS  
 EXISTING AND POTENTIAL RESERVOIR SITES  
 UNITED STATES DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE







103  
WESTFIELD STUDY AREA  
SITE DATA FOR

Subwatershed WE-43, Munn Brook

The Munn Brook subwatershed covers about 14,300 acres in Granville, Southwick, and Westfield in Hampden County.

The major stream in the subwatershed is Munn Brook which forms in Granville and flows northeasterly to the Little River in Westfield.

Elevations in the subwatershed range from a high of 1,450 feet in Granville to a low of about 200 feet in Westfield.

Two potential reservoir sites and three existing reservoirs were studied.

POTENTIAL SITE WE-4301

Location: On Tillotson Brook about 6,400 feet upstream from Old Westfield Road in Granville, Mass.

West Granville, Mass. USGS quadrangle

Latitude: 42°05'12" Longitude: 72°52'37"

Facilities Affected: None below elevation 943

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). Depth to schist bedrock in the foundation is estimated to be 10 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

Public Ownership: The site is owned by the city of Westfield.

POTENTIAL SITE WE-4302

Location: On Tillotson Brook about 2,000 feet upstream from Old Westfield Road in Granville, Mass.

Southwick, Mass. USGS quadrangle

Latitude: 42°05'16" Longitude: 72°51'46"

Facilities Affected: None below elevation 787

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till); shallow to schist bedrock. Depth to bedrock in the foundation is estimated to be 10 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

Public Ownership: The site is owned by the city of Westfield except for a parcel of land on the left side of the stream.

## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

## STUDY AREA-WESTFIELD

## SUBWATERSHED MUNN BROOK

## BENEFICIAL POOL

\*\*\*\*\*  
 ELEV STORAGE AC FT IN (\$)  
 (MSL) AC FT IN (\$)  
 COST PER AC FT (\$)  
 COST/ SURF AC (\$)  
 DEPTH AT DAM (FT)  
 CREST ELEV TYPE (MSL)  
 STORAGE AT CREST AC FT IN (\$)  
 COST PER AC FT (\$)  
 DESIGN HIGH WATER  
 EMERGENCY SPILLWAY  
 DAM  
 TOP ELEV HGT VCL (1000)  
 FILL VCL CY  
 PERCENT CHANCE  
 SAFE YIELD AT 95  
 \*\*\*\*\*

SITE-WE-4301

\*\*\*\*\*  
 DA= 1.28 SQ MI = 819 AC  
 STREAM WATER QUALITY (A) 100-YR PRIN SPWY DESIGN STORM  
 LATITUDE 42-05-12 LONGITUDE 72-52-37  
 RUNOFF = 8.00 IN, PEAK FLOW = 382 CFS  
 \*\*\*\*\*

864.5	0	0.0	1	14.5	906.9	E	432	6.3	1090	909.3	30	913.9	64	117	0.25
890.0	100	1.5	9	40.0	890.0	T	110	1.6	7270	902.4	24	907.8	58	89	0.56
904.8	368	5.4	26	54.8	917.3	E	774	11.3	840	919.5	39	923.6	74	177	0.92
920.8	903	13.2	41	70.8	929.3	E	1309	19.2	690	931.5	56	935.5	85	269	1.17
936.3	1707	25.0	62	86.3	940.8	E	2012	29.5	600	943.1	73	946.4	96	380	

SITE-WE-4302

\*\*\*\*\*  
 DA= 2.15 SQ MI = 1376 AC  
 STREAM WATER QUALITY (A) 100-YR PRIN SPWY DESIGN STORM  
 LATITUDE 42-05-16 LONGITUDE 72-51-46  
 RUNOFF = 8.00 IN, PEAK FLOW = 641 CFS  
 \*\*\*\*\*

701.0	0	0.0	3	11.1	749.2	T	476	4.1	3200	759.5	25	766.0	76	329	0.29
722.0	100	0.8	8	32.0	722.0	T	117	1.0	10090	734.5	13	741.8	52	129	0.65
741.9	335	2.9	16	51.9	741.9	T	352	3.0	3680	752.7	21	757.9	68	249	1.11
763.7	804	7.0	28	73.6	763.7	T	821	7.1	3080	777.5	35	785.7	96	598	1.49
782.5	1413	12.3	37	92.5	782.5	T	1430	12.5	1740	787.0	40	790.0	100	670	

## NOTES -

(1) COSTS ARE BASED ON 1974 S.C.S. DESIGN CRITERIA AND COST DATA.

(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.

(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

\*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*

EXISTING SITE WE-4305 (Granville Reservoir)

Location: On Tillotson Brook about 2,500 feet downstream from Old Westfield Road in Granville, Massachusetts.

Southwick, Mass.-Conn. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
591	70	80	3,250	5.08

Potential for Expansion: Topography limits any significant increase in surface area. Storage volume could be increased with a higher dam.

Remarks: The dam is an earthfill structure about 800 feet long with rock riprap on the upstream slope. The principal spillway is a 36-inch concrete lined steel pipe with gate control. The emergency spillway, located on the right abutment, is a 60-foot wide concrete chute structure with one foot of flashboards. The dam appear to be well maintained.

Ownership and Use: The reservoir is owned by the city of Westfield and used for water supply.

\*\*\*\*\*

EXISTING SITE WE-4306 (Winchell Reservoir)

Location: On Munn Brook about 400 feet upstream from Winchell Road in Granville, Massachusetts.

Southwick, Mass.-Conn. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
465	2	13	3,350	5.23

Potential for Expansion: Topography limits any significant increase in surface area and storage volume.

Remarks: The dam is a 150-foot long stone masonry structure with a 50-foot long step weir located in the center of the dam. The weir has a total of 7 steps and a drop of 10 feet. A 24-inch gated steel pipe is located in the left abutment.



EXISTING SITE WE-4306 (Winchell Reservoir) (cont'd)

Ownership      The reservoir is owned by the city of Westfield and is  
and  
Use:            used for water supply.

\*\*\*\*\*

EXISTING SITE WE-4307 (Cooley Lake)

Location:      On an unnamed tributary to Dickinson Brook about 1,700  
feet northeast of the intersection of State Route 189 and  
Silver Street in Granville, Massachusetts.

Southwick, Mass.-Conn. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
645	60	10	400	0.63

Potential      The size of the existing reservoir surface area in relation  
for  
Expansion:      to the drainage area limits expansion potential.

Remarks:      The dam is an earthfill structure about 100 feet long with  
a private road across the top. The spillway is a 6-foot  
long concrete chute with 6 inches of stoplogs. The down-  
stream slope is heavily wooded. The concrete in the spill-  
way appears in good condition.

Ownership      The lake is owned by Herbert A. Hires and is used for  
and  
Use:            recreation.

\*\*\*\*\*



WE-4305  
Granville Reservoir



WE-4307  
Cooley Lake



WE-4306  
Winchell Reservoir

EXISTING RESERVOIRS  
SUBWATERSHED WE-43  
MUNN BROOK







# LEGEND

- WATERSHED BOUNDARY
- DRAINAGE AREA ABOVE STRUCTURE
- POTENTIAL SITE SHOWING BENEFICIAL POOL FOR LARGEST STRUCTURE  
4306
- EXISTING POND OR RESERVOIR  
4302



Source—U.S.G.S. Quad Sheets  
Southwick, Mass.—1972  
West Granville, Mass.—1971

## MUNN BROOK (WE-43) WESTFIELD STUDY AREA

MASSACHUSETTS

EXISTING AND POTENTIAL RESERVOIR SITES  
UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

1 1/2 0 1 MILE





WESTFIELD STUDY AREA  
SITE DATA FOR

Subwatershed WE-44, Powdermill Brook

The Powdermill Brook subwatershed covers about 12,100 acres in Holyoke, Montgomery, Westfield, and West Springfield in Hampden County; and Southampton in Hampshire County.

The major stream in the subwatershed is Powdermill Brook which originates in Montgomery and flows southeasterly to the Westfield River in Westfield.

A Watershed Protection and Flood Prevention Project has been completed for the Powdermill Brook watershed. Two dams were built; a multiple-purpose flood prevention and recreation structure on Arm Brook and a single-purpose floodwater retarding structure on Powdermill Brook.

Elevations in the subwatershed range from a high of about 1,100 feet in Montgomery and Westfield to about 100 feet in Westfield, near the Westfield River.

Three potential reservoir sites and five existing reservoirs were studied.

POTENTIAL SITE WE-4402

Location: On Powdermill Brook about 2,800 feet downstream from Russellville Road in Westfield, Mass.

Woronoco, Mass. USGS quadrangle

Latitude: 42°09'19" Longitude: 72°45'33"

Facilities	Facility	Elevation
Affected:	Russellville Road and utilities	239
	House and shed	248
	House	255
	4 Houses and 1 barn	260

Geologic Conditions: Both abutments are sand and gravel (glacial outwash). Depth to triassic sandstone and conglomerate bedrock in the foundation is estimated to be 30 to 40 feet. Waterholding capabilities appear to be poor. Seepage is expected through both abutments and the foundation. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*



POTENTIAL SITE WE-4403

Location: On an unnamed tributary to Powdermill Brook about 1,800 feet upstream from Montgomery Road in Westfield, Mass.

Woronoco, Mass. USGS quadrangle

Latitude:  $42^{\circ}08'58''$  Longitude:  $72^{\circ}45'55''$

Facilities: None below elevation 247  
Affected:

Geologic Conditions: Both abutments are sand and gravel (glacial outwash). Depth to triassic sandstone and conglomerate bedrock in the foundation is estimated to be 30 to 40 feet. Waterholding capabilities appear to be poor. Seepage is expected through both abutments. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location. Refer to Existing Site WE-4403 for data on the existing dam and reservoir at this site.

Public Ownership: The site is owned by the Westfield Sportsmens Club.

\*\*\*\*\*

POTENTIAL SITE WE-4404

Location: On Barry Brook about 2,000 feet upstream from Old Holyoke Road in Westfield, Mass.

Mount Tom, Mass. USGS quadrangle

Latitude:  $42^{\circ}08'44''$  Longitude:  $72^{\circ}41'34''$

Facilities: None below elevation 367  
Affected:

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (sandy glacial till). Depth to conglomerate and shale in the foundation is estimated to be 40 to 50 feet. Waterholding capabilities appear to be fair. Seepage is expected through the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*



EXISTING SITE WE-4403 (Westfield Sportsmen's Club)

Location: On Simmons Brook about 1,700 feet upstream from Montgomery Road in Westfield, Massachusetts.

Woronoco, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage (Acres)</u>	<u>(Sq. Mi.)</u>
235	10	10	850	1.33

Potential for Expansion: Please refer to Site Data and Design Summary Table for Potential Site WE-4403 for details.

Remarks: The dam is an earthfill structure about 225 feet long. The spillway system is a 30-foot long concrete weir having a maximum head of 4 feet. The pond drain is an 18-inch steel pipe beneath the weir. The dam appears to be well maintained.

Ownership and Use: The site is owned by the Westfield Sportsmen's Club and is used for recreation.

\*\*\*\*\*

EXISTING SITE WE-4410 (Horse Pond and Pequot Pond)

Location: On Pond Brook about 500 feet upstream from Buck Pond Road in Westfield, Massachusetts.

Mount Tom, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
251	190	5	1,650	2.58

Potential for Expansion: Limited. Expansion would create a large area of shallow water and would affect many cabins along the present waterline. The size of the existing reservoir surface area in relation to the drainage area limits expansion potential.

Remarks: The dam is an earthfill structure about 150 feet long with a 4-foot long rock masonry spillway having a maximum head of 3 feet. The spillway is the principal control for Hampton Ponds. Both abutments are vegetated.

Ownership and Use: The pond is an enlarged Great Pond used for recreation. The dam is owned by the city of Westfield.

\*\*\*\*\*



EXISTING SITE WE-4411 (Chapin Pond)

Location: On Pond Brook about 2,000 feet upstream from Owen District Road in Westfield, Massachusetts.

Mount Tom, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
246	10	17	2,250	3.52

Potential for Expansion: Topography does not make expansion feasible. Several large ponds are located upstream. Summer flow in Pond Brook may be quite low due to evaporation losses in the upstream ponds.

Remarks: The dam is an earthfill structure about 300 feet long. The spillway system is a 6-foot wide channel on the left abutment having a maximum head of 5 feet. Dumped rock riprap lines the channel. Some trees are growing on the downstream slope.

Ownership and Use: The pond is owned by the city of Westfield and is used for recreation.

\*\*\*\*\*

EXISTING SITE WE-4412 (Arm Brook Dam)

Location: On Arm Brook about 1,000 feet upstream from the Massachusetts Turnpike (Interstate Route 90) in Westfield, Massachusetts.

Mount Tom, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
196	10	55	2,150	3.36

Potential for Expansion: The flood pool presently has a capacity for storing 3.3 inches of runoff from the drainage area. To expand the permanent pool, extensive diking on both abutments would be necessary.

Remarks: The dam is an earthfill structure about 700 feet long. The site has capacity for 141 acre-feet for fish and wildlife improvement and 575 acre-feet for floodwater storage.

Ownership and Use: The site is owned by the city of Westfield and is used for fish and wildlife, recreation, and flood protection. The dam was built as part of the Powdermill Brook PL-566 Watershed Project.

\*\*\*\*\*

EXISTING SITE WE-4413 (Powdermill Brook Dam)

Location: On Powdermill Brook about 4,000 feet upstream from State Route 10 in Westfield, Massachusetts.

Mount Tom, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
163	5	47	2,950	4.61

Potential for Expansion: The flood pool presently has a capacity for storing 3.9 inches of runoff from the drainage area. Adding a significant volume of permanent storage at this site would require extensive diking to protect an urban area on the right abutment.

Remarks: The dam is an earthfill structure about 600 feet long. The principal spillway is a 48-inch diameter concrete conduit which controls the level of the sediment pool. The site has capacity for 955 acre-feet of flood storage.

Ownership and Use: The site is owned by the city of Westfield and is used for flood protection. The dam was built as part of the Powdermill Brook PL-566 Watershed Project.

\*\*\*\*\*



WE-4403  
Westfield Sportsmen's Club



WE-4412  
Arm Brook Dam



WE-4410  
Horse Pond and Pequot Pond



WE-4413  
Powdermill Brook Dam



WE-4411  
Chapin Pond

EXISTING RESERVOIRS  
SUBWATERSHED WE-44  
POWDERMILL BROOK







# LEGEND

- WATERSHED BOUNDARY
- DRAINAGE AREA ABOVE STRUCTURE
- POTENTIAL SITE SHOWING BENEFICIAL POOL FOR LARGEST STRUCTURE  
4402
- EXISTING POND OR RESERVOIR  
4401



Source - USGS Quad. Sheets  
Mt Tom - 1958  
Woronoco - 1967  
West Springfield - 1958

**POWDERMILL BROOK (WE-44)**  
**WESTFIELD STUDY AREA**  
MASSACHUSETTS  
**EXISTING AND POTENTIAL RESERVOIR SITES**  
UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE





WESTFIELD STUDY AREA  
SITE DATA FOR

Subwatershed WE-45, Great Brook

The Great Brook subwatershed covers about 15,900 acres in Agawam, Southwick, and Westfield in Hampden County.

The major stream in the subwatershed is Great Brook which originates at the outlet of the Congamond Lakes in Southwick and flows northerly to the Westfield River in Westfield.

Elevations in the subwatershed range from a high of about 480 feet in Southwick to a low of about 100 feet in Westfield.

Seven potential reservoir sites and one existing reservoir were studied.

POTENTIAL SITE WE-4501

Location:	On Kellog Brook about 3,800 feet upstream from Tannery Road in Southwick, Mass.	
	Southwick, Mass. USGS quadrangle	
	Latitude: 42°05'07"	Longitude: 72°45'26"
Facilities Affected:	<u>Facility</u> Southwick Country Club golf course	<u>Elevation</u> 225
Geologic Conditions:	Both abutments are sand and gravel (glacial outwash). Depth to conglomerate and sandstone bedrock in the foundation is estimated to be 40 to 50 feet. Waterholding capabilities appear to be poor. Seepage is expected through both abutments and possibly the foundation. Pervious borrow material for dam construction was located near the site; impervious material was not located.	
Engineering Notes:	The right abutment is recommended as the excavated emergency spillway location.	

\*\*\*\*\*

POTENTIAL SITE WE-4503

Location: On Tuttle Brook about 950 feet upstream from Coes Road in Southwick, Mass.

Southwick, Mass. USGS quadrangle

Latitude: 42°04'05" Longitude: 72°47'14"

Facilities Affected: None below elevation 357

Geologic Conditions: Both abutments are sand and gravel at the toe with silty sand at higher elevations. Depth to conglomerate and shale bedrock in the foundation is estimated to be 40 to 50 feet. Waterholding capabilities appear to be fair. Seepage is expected at the toe of both abutments and the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE WE-4504

Location: On Slab Brook about 1,600 feet upstream from the confluence with Great Brook in Southwick, Mass.

West Springfield, Mass. USGS quadrangle

Latitude: 42°04'22" Longitude: 72°44'19"

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	2 irrigation ponds	215

Geologic Conditions: Both abutments are sand and gravel (glacial outwash). Depth to conglomerate and shale bedrock in the foundation is estimated to be 40 to 50 feet. Waterholding capabilities appear to be poor. Seepage is expected through both abutments and the foundation. Previous borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE WE-4505

Location: On Johnson Brook about 1,500 feet downstream from John Mason Road in Southwick, Mass.

Southwick, Mass. USGS quadrangle

Latitude:  $42^{\circ}03'00''$  Longitude:  $72^{\circ}47'50''$

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Fred Jackson Road and utilities	275
	John Mason Road and utilities	278
	House	300
	House and garage	300
	House and barn	310

Geologic Conditions: Both abutments are sand and gravel (glacial outwash). Depth to conglomerate and shale bedrock in the foundation is estimated to be 40 to 50 feet. Waterholding capabilities appear to be poor. Seepage is expected through both abutments and the foundation. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE WE-4506

Location: On an unnamed tributary to Great Brook about 2,500 feet upstream from Route 57 in Southwick, Mass.

Southwick, Mass. USGS quadrangle

Latitude:  $42^{\circ}03'39''$  Longitude:  $72^{\circ}46'19''$

Facilities Affected: None below elevation 297

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). Depth to conglomerate and shale bedrock in the foundation is estimated to be 30 to 40 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*



POTENTIAL SITE WE-4507

Location: On Great Brook about 4,600 feet upstream from Feeding Hills Road in Southwick, Mass.

West Springfield, Mass. USGS quadrangle

Latitude: 42°03'29" Longitude: 72°44'37"

Facilities Affected:	Facility	Elevation
	Gasline	165
	Powdermill Road and utilities	192
	Longyard Road and utilities	198
	House	198
	House	210
	House	215
	Sheep Pasture Road and utilities	215
	2 houses	218
	College Highway and utilities	219
	House	220

Geologic Conditions: Both abutments are sand and gravel (glacial outwash). Depth to conglomerate and shale bedrock in the foundation is estimated to be 40 to 50 feet. Waterholding capabilities appear to be poor. Seepage is expected through both the abutments and possibly the foundation. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE WE-4508

Location: On an unnamed tributary to Great Brook about 2,900 feet downstream from Foster Road in Southwick, Mass.

West Springfield, Mass. USGS quadrangle

Latitude: 42°03'43" Longitude: 72°44'09"

Facilities Affected:	Facility	Elevation
	Foster Road and utilities	194
	2 houses	210

Geologic Conditions: Both abutments are sand and gravel (glacial outwash). Depth to conglomerate and shale bedrock in the foundation is estimated to be 40 to 50 feet. Waterholding capabilities appear to be poor. Seepage is expected through both abutments and possibly the foundation. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

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STUDY AREA-WESTFIELD SUBWATERSHED GREAT BROOK

BENEFICIAL POOL	* EMERGENCY SPILLWAY	* DESIGN	* DAM	* SAFE
*****	*****	*****	*****	*****

[illegible][illegible][illegible][illegible]

SITE-WE-4501

DA= 1.28 SQ MI = 819 AC	USGS QUAD-SOUTHWICK	LATITUDE 42-05-07	LONGITUDE 72-45-28
STREAM WATER QUALITY (B)	100-YR PRIN SPWY DESIGN STORM	RUNOFF = 7.90 IN, PEAK FLOW =	377 CFS
SITE RATING (3)			
SITE RATING (3)			

[illegible][illegible]

Year	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100																																																																				

232.5	394	5.8	1630	55	11680	20.5 *	232.5 T	405	5.9	1590 *	237.2	81 *	240.2	28	36 *	0.58 *
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[illegible]

SITE NO.	DATE	WATER QUALITY (B)	100-YR PRIN	SPWY DESIGN	STORM	RUNOFF =	7.90 IN.	PEAK FLOW =	197 CFS
1	12/27/80	100-YR PRIN	SPWY DESIGN	STORM	RUNOFF =	7.90 IN.	PEAK FLOW =	197 CFS	

[illegible]

332.2	100	2.8	2730	17	15720	12.3 *	338.7 E	252	7.1	1080 *	341.1	31 *	344.4	24	33 *	0.20
340.7	305	8.5	1230	30	12420	20.7 *	345.2 E	457	12.8	820 *	347.7	38 *	351.1	31	58 *	0.39

Year	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
346.9	510	14.2	870	37	11920	26.9	*	349.4	E	611	17.1	720	*	351.7	44	*	354.7	35	75	*	0.50																																																																																																														
352.0	715	20.0	750	44	12140	32.0	*	354.5	E	835	23.4	640	*	356.7	54	*	359.7	40	103	*	0.58																																																																																																														

[illegible]

SITE-WE-4504 DA= 0.93 SQ MI = 595 AC USGS QUAD-WEST SPRINGFIELD LATITUDE 42-04-22 LONGITUDE 72-44-19

SITE RATING (3)	STREAM WATER QUALITY (B)	100-YR PRIN SPWY DESIGN STORM	RUNOFF = 7.90 IN, PEAK FLOW = 27' CFS
		*	*

[illegible][illegible]

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100																																			

\* \* \*

NOTES - (1) COSTS ARE BASED ON 1974 S.C.S. DESIGN CRITERIA AND COST DATA.  
(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE INCLUDING BENEFICIAL STORAGE.

(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, F= TWO SPILLWAYS, N= NONE

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE

CONSIDERED ACCURATE TO THAT DEGREE.

\*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*



## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-WESTFIELD										SUBWATERSHED GREAT BROOK									
BENEFICIAL POOL					EMERGENCY SPILLWAY					DESIGN					DAM				
ELEV	STORAGE	COST PER AC FT	COST/ SURF AC	DEPTH AT DAM	CREST ELEV	STORAGE AT CREST	COST PER AC FT	ELEV	AREA	TOP ELEV	HGT	FILL VOL	PERCENT CHANCE	YIELD AT 95	SAFE				
(MSL)	AC FT	(\$)	(AC)	(FT)	TYPE	AC FT	IN	(MSL)	(AC)	(MSL)	FT	(1000 CY)	*	*	*				
267.4	0	0.0	3	7.3	293.6	E	393	5.6	1270	296.1	34	300.2	40	101	*****				
280.2	100	1.5	14	20.2	280.2	T	110	1.6	5620	291.2	26	297.9	38	87	0.25				
291.1	313	4.5	26	31.0	301.6	E	690	10.0	990	303.9	53	307.5	47	150	0.50				
302.7	738	10.7	49	42.8	309.2	E	1129	16.4	830	311.6	78	315.6	56	221	0.84				
312.5	1368	19.9	81	52.5	312.5	T	1378	20.0	930	317.0	98	320.0	60	272	1.11				

\*\*\*\*\*  
 NOTES - (1) COSTS ARE BASED ON 1974 S.C.S. DESIGN CRITERIA AND COST DATA.  
 (2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.  
 (3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE  
 (4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.  
 (5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE  
 CONSIDERED ACCURATE TO THAT DEGREE.  
 \*\*\*\*\*

\*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*



# SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

## STUDY AREA - WESTFIELD

### BENEFICIAL POOL

## SUBWATERSHED PAUCATUCK BROOK

ELEV	STORAGE	IN	AC FT	COST PER AC FT	DEPTH AT DAM	CREST ELEV	STORAGE AT CREST	COST PER AC FT	DESIGN HIGH WATER	DAM	SAFE YIELD
(MSL)	AC FT	IN	(AC)	(AC)	(FT)	(MSL)	AC FT	(AC)	(MSL)	(AC)	(MGD)
DA= 0.49 SQ MI = 314 AC											
STREAM WATER QUALITY (B)											
100-YR PRIN SPWY DESIGN STORM											
USGS QUAD-SOUTHWICK											
LATITUDE 42-03-39 LONGITUDE 72-46-19											
RUNOFF = 7.90 IN, PEAK FLOW = 144 CFS											
SITE-WE-4506	SITE RATING (1)	0	0.0	1	6.5	290.4	E	108	4.1	1410	*
276.5						294.7	E	202	7.6	1090	*
290.2	100	3.8	2200	17	20.2	292.0	T	140	5.3	1950	*
292.0	136	5.1	2000	21	22.0	292.5	T	150	5.6	1850	*
292.5	146	5.6	1900	22	22.5						*

USGS QUAD-WEST SPRINGFIELD											
LATITUDE 42-03-29 LONGITUDE 72-44-37											
RUNOFF = 7.90 IN, PEAK FLOW = 2212 CFS											
SITE-WE-4507	SITE RATING (3)	0	0.0	41	5.1	196.3	T	3121	4.1	520	*
169.1						171.0	T	213	0.3	5970	*
171.0	100	0.1	12710	55	7.0	188.5	T	1967	2.5	770	*
188.5	1854	2.5	820	134	24.5	209.3	T	5476	7.3	400	*
209.3	5363	7.1	400	199	45.4	222.5	T	9246	12.3	290	*
222.5	9134	12.1	300	525	58.5						*

USGS QUAD-WEST SPRINGFIELD											
LATITUDE 42-03-43 LONGITUDE 72-44-09											
RUNOFF = 7.90 IN, PEAK FLOW = 474 CFS											
SITE-WE-4508	SITE RATING (3)	0	0.0	3	11.3	204.1	E	552	6.4	890	*
171.3						185.2	T	113	1.2	5780	*
185.2	100	1.2	6520	12	25.2	189.0	T	164	1.9	4120	*
189.0	151	1.7	4480	15	29.0	194.6	T	267	3.0	3290	*
194.6	254	3.0	3450	22	34.5	211.1	E	880	10.3	720	*
198.6	357	4.1	1780	28	38.5	210.7	E	864	10.1	740	*
200.3	408	4.8	1560	31	40.3						*

NOTES - (1) COSTS ARE BASED ON 1974 S.C.S. DESIGN CRITERIA AND COST DATA.

(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.

(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

\*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*

EXISTING SITE WE-4510 (Congamond Lakes)

Location: On Great Brook at Berkshire Avenue in Southwick, Massachusetts.

Southwick, Mass.-Conn. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
225	450	8	6,700	10.47

Potential for Expansion: Limited. The ponds are surrounded by many cabins and recreational facilities.

Remarks: Congamond Lakes consist of North Pond, Middle Pond and South Pond. The principal control is located in Middle Pond and is formed from the embankment of Berkshire Avenue. The spillway system is a 20-foot wide monolith structure with provisions for 6 feet of stoplogs.

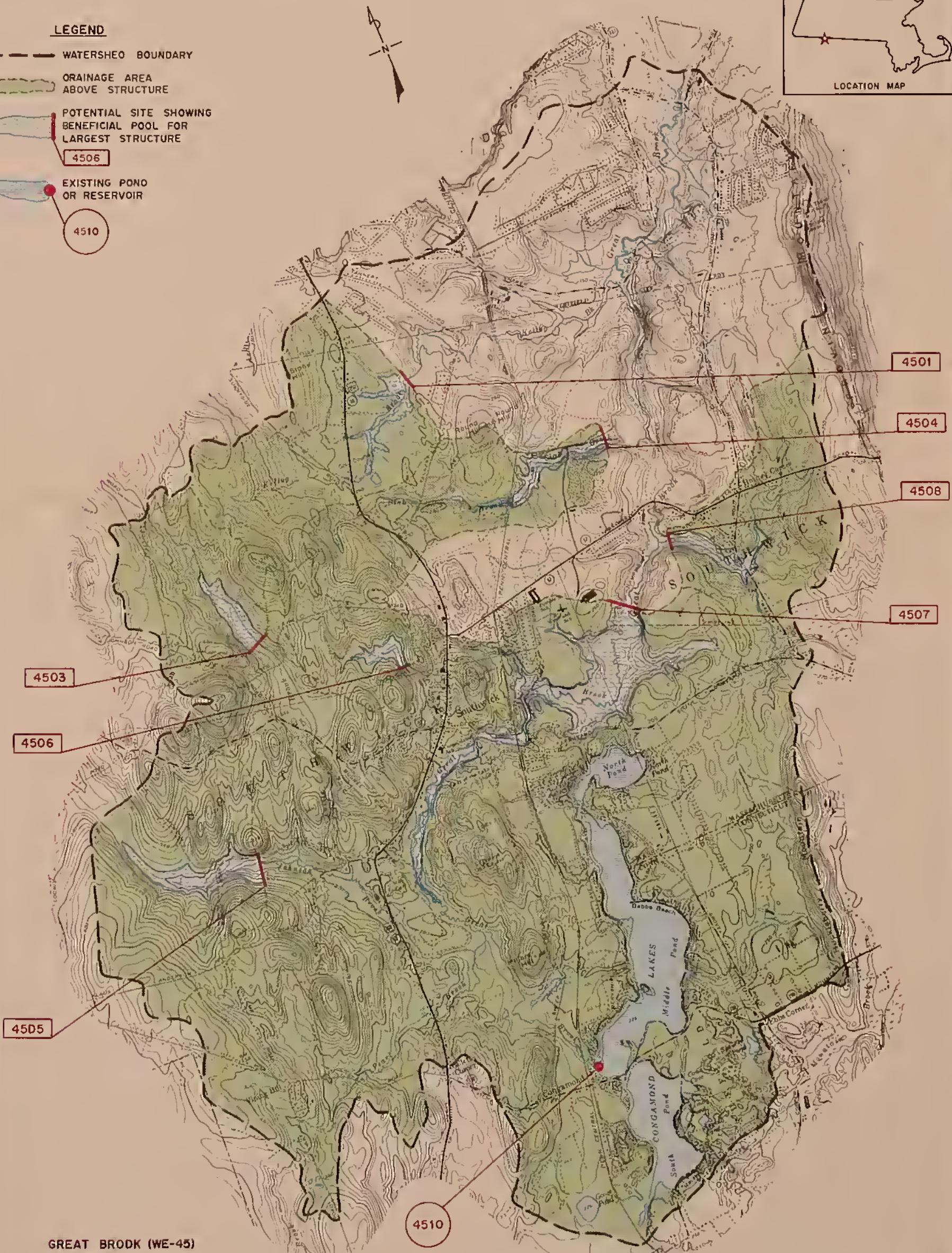
Ownership and Use: The lakes are enlarged Great Ponds used for recreation. Water rights are controlled by the town of Southwick.





# LEGEND

- WATERSHED BOUNDARY
- DRAINAGE AREA ABOVE STRUCTURE
- POTENTIAL SITE SHOWING BENEFICIAL POOL FOR LARGEST STRUCTURE
- 4506
- EXISTING POND OR RESERVOIR
- 4510



GREAT BROOK (WE-45)  
WESTFIELD STUDY AREA  
MASSACHUSETTS

EXISTING AND POTENTIAL RESERVOIR SITES  
UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

Source—U.S.G.S. Quad Sheets  
Southwick, Mass. — 1958  
West Springfield, Mass. — 1958





WESTFIELD STUDY AREA  
SITE DATA FOR

Subwatershed WE-46, Paucatuck Brook

The Paucatuck Brook subwatershed covers about 16,700 acres in Agawam, Holyoke, Westfield, and West Springfield in Hampden County.

The subwatershed includes the area which drains into the Westfield River from the confluence with Powdermill Brook downstream to the Connecticut River in West Springfield.

Elevations range from a high of about 700 feet in West Springfield to a low of about 50 feet near the confluence with the Connecticut River.

Three potential reservoir sites and three existing reservoirs were studied.

POTENTIAL SITE WE-4601

Location: On an unnamed tributary to the Westfield River about 900 feet upstream from North Westfield Street, in Agawam, Mass.

West Springfield, Mass. USGS quadrangle

Latitude: 42°05'46" Longitude: 72°41'11"

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	House	171
	Underground water line	175
	House and barn	185
	House	188
	4 houses	190
	2 houses	198

Geologic Conditions: The left abutment is poorly graded sand and gravel (glacial outwash). The right abutment is silty sand with gravel (glacial till). Depth to conglomerate and shale bedrock in the foundation is estimated to be 15 to 20 feet. Waterholding capabilities appear to be poor. Seepage is expected through the left abutment. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE WE-4603

Location: On Block Brook about 4,200 feet upstream from Westfield Street in West Springfield, Mass.

West Springfield, Mass. USGS quadrangle

Latitude: 42°06'59" Longitude: 72°39'30"

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	House, and Gooseberry Road	198
	House	200
	House	205
	House	208
	2 houses and Country View Street	210
	Dewey Street	212

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). Depth to conglomerate and shale bedrock in the foundation is estimated to be 10 to 15 feet. Water-holding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE WE-4604

Location: On White Brook about 1,000 feet downstream from North Street in Agawam, Mass.

West Springfield, Mass. USGS quadrangle

Latitude: 42°04'53" Longitude: 72°39'48"

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	Pipe line and high tension lines	110
	2 houses	120
	North Street	125
	3 houses, swimming pool and garden center	130
	2 houses	145



POTENTIAL SITE WE-4604 (cont'd.)

Geologic Conditions: Both abutments are poorly graded sand and gravel (glacial outwash) with lacustrine silt at about elevation 110. Depth to conglomerate and shale bedrock in the foundation is estimated to be 40 to 50 feet. Waterholding capabilities appear to be poor. Seepage is expected through both abutments and the foundation. Previous borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

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(12) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.  
(13) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE  
(14) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.  
(15) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

\*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*

DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*

EXISTING SITE WE-4605 (Hugh McLean Reservoir)

Location: About 5,000 feet south of the intersection of Apremont Way and Rock Valley Road in Holyoke, Massachusetts.

Mount Tom, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
427	65	--	300	.47

Potential for Expansion: Topography limits any significant increase in surface area. Expansion would require diking at the north and east ends of the reservoir.

Remarks: The reservoir is a dugout-type reservoir which stores water pumped from the Manhan Reservoir. The capacity of the reservoir is 365 million gallons.

Ownership and Use: The reservoir is owned by the city of Holyoke and is used for water supply.

\*\*\*\*\*

EXISTING SITE WE-4606 (Ashley Pond)

Location: On Poucatuck Brook at the intersection of Westfield Road and Lower Westfield Road in Holyoke, Mass.

Mount Tom, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
317	290	--	1,650	2.58

Potential for Expansion: The size of the existing reservoir surface area in relation to the drainage area limits expansion potential.

Remarks: The reservoir is a dugout-type reservoir which stores water pumped from the Manhan Reservoir. The capacity of the reservoir is 795 million gallons.

Ownership and Use: The site is owned by the city of Holyoke and is used for water supply.

\*\*\*\*\*



EXISTING SITE WE-4607 (Bearhold Reservoir)

Location: On Paucatuck Brook about 6,000 feet downstream from the Massachusetts Turnpike (Interstate Route 90) in West Springfield, Massachusetts.

Mount Tom, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres)</u>	<u>(Sq. Mi.)</u>
164	15	20	3,550	5.55

Potential for Expansion: Topography limits any significant increase in surface area. It appears that the reservoir level could be raised at least 50 feet without affecting facilities other than a road.

Remarks: The dam is a 150-foot long earthfill structure with rock riprap on the upstream slope. The principal spillway is a 50-foot long concrete chute spillway having a rectangular weir box inlet with a depth of 30 feet.

Ownership and Use: The pond is owned by the town of West Springfield and is used for water supply.

\*\*\*\*\*

WE-4605  
Hugh, McLean Reservoir

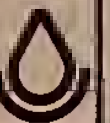


WE-4607  
Bearhold Reservoir



WE-4606  
Ashley Pond

EXISTING RESERVOIRS  
SUBWATERSHED WE-46  
FUGGATUE CREEK











## MUNICIPAL INDEX OF RESERVOIR SITE DATA

<u>City or Town</u>	<u>Site No.</u>	<u>Narrative Information Page</u>	<u>Design Summary Page</u>
Agawam	WE-4601	121	124
	4604	122	124
Ashfield	WE-3606	12	29
	3607	12	29
	3609	13	30
	3610	14	30
	3611	14	30
	3614	16	31
	3615	16	32
	3617	17	32
	3641	39	
Becket	WE-3810	61	
	3811	62	
	3814	62	
	3815	63	
	3818	63	
	3821	57	60
	3825	64	
	3826	65	
	3827	65	
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Blandford	WE-3820	56	60
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	4003	82	83
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	4214	93	99
	4200	100	
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	3710	51	
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Chesterfield	WE-3624	21	35
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	3626	22	35
	3631	24	37
	3642	40	
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Cummington	WE-3616	17	32
	3618	18	33
Goshen	WE-3619	18	33
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Granville	WE-4215	94	99
	4221	101	
	4301	103	104
	4302	103	104
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Holyoke	WE-4605	125	
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Huntington	WE-3634	25	38
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	3707	46	50
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	3807	57	
	3809	61	
	3812	62	

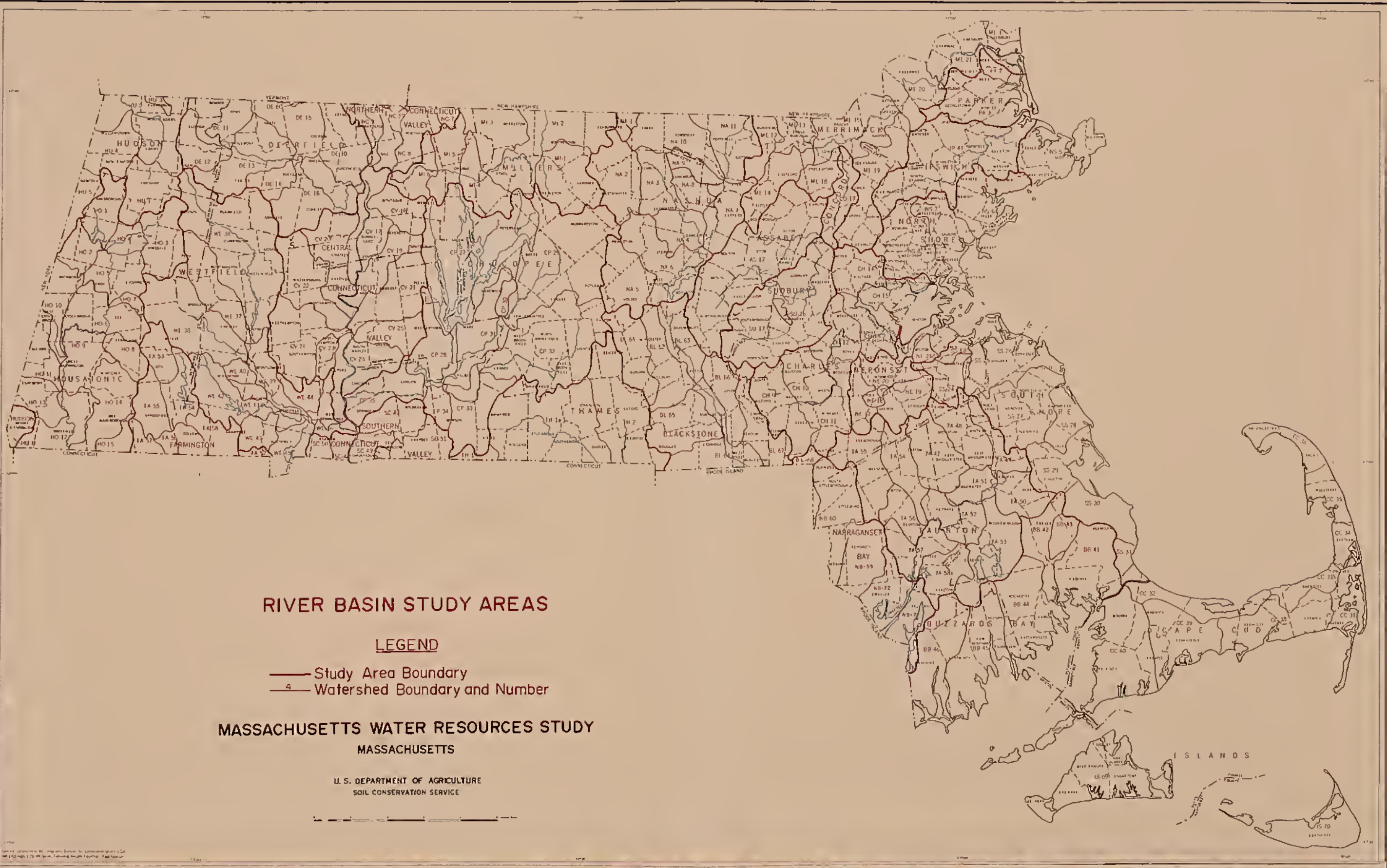
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Peru	WE-3701	43	48
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Plainfield	WE-3608	13	29
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Russell	WE-3916	79	
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Savoy	WE-3601	9	27
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Southwick	WE-4501	113	117
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Worthington	WE-3621	19	34
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## RIVER BASIN STUDY AREAS

### LEGEND

- Study Area Boundary
- - - Watershed Boundary and Number

## MASSACHUSETTS WATER RESOURCES STUDY MASSACHUSETTS

U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

Scale: 1 inch = 20 miles







